THE Genesee Farmer.

THE PRACTICAL AND SCIENTIFIC FARMERS OWN PAPER.

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PULVERIZATION OF THE SOIL.

We might select a more seasonable subject for consideration than that of the proper amelioration or pulverization of the soil we till, but it would be difficult to find one more intimately connected with the economy of agriculture, or one more generally neglected. Most of our good farmers plow deep enough, but there are few who pulverize the soil sufficiently. We are urgent advocates of deep plowing, but we had rather six inches were well plowed and thoroughly worked with cultivators, harrows, rollers, etc., than have twelve inches burst up and left in a half-worked, raw state. Mechi some years since, having witnessed the working of "Gibbs' Rotary Digging Machine," enthusiastically asserted in the *London Times*, that "that old implement the plow was doomed." His sanguine expectations have not been realized, but we can not doubt, now that the subject is attracting so much attention from inventors in this and other countries, that some method of breaking up and pulverizing the soil more expeditious and economical than that of plowing will be found.

Dr. Wells, of Cambridge, found that the soils of the Scioto valley in Ohio, which have long been noted for their extraordinary fertility, contained a no larger proportion of the elements of plants than the comparatively sterile soils of New England. So far as chemical composition was concerned, one soil was just as good as the other, the only difference being that the rich Scioto valley soil was composed of *finer particles* than that of Massachusetts. Now we are not to infer from this that the land of New England can be rendered as productive as that of the Scioto valley simply by good plowing and thorough working, since these could only break up the conglomerated particles of the soil, and not reduce the size of the particles themselves, neither are we to anticipate that any mechanical contrivance will be discovered for grinding the soil into a fine powder; but we may safely assert that the results of Dr. Wells analyses clearly indicate the direction in which we must look for any great improvement in our national agriculture.

The beneficial effects of pulverization are attributable to the increased permeability of the soil to rain and air; the oxygen, carbonic acid and ammonia of the air, have a great effect in decomposing the organic and in disintegrating the inorganic matter of the soil and rendering them available as food for plants, while it allows the rain water to act on a greater surface, and thus to dissolve out more matter from the soil. We all know that a lump of sugar is much longer in dissolving than the same amount of pulverized sugar. The principle applies in all cases. Good plowing and thorough working of the soil, therefore, loosen the soil and form a fine bed for the plants to root in; they prepare the soil in such a manner that the air, carbonic acid and ammonia can circulate freely through it,—conditions which are known to be essential to the growth of plants. The free admission of the air too, induces the liberation of carbonic acid, ammonia, etc., which in their nascent state, are known to be powerful solvents, and to have great quickening and ameliorating effects on the soil. When it is remembered that plants can take up their food only in solution, and that most soils abound in the elements of plants lying in an inert, insoluble condition, it will not be difficult to account for many of the surprising results witnessed from good tillage alone.

A good plowing with the frequent use of the cultivator, harrow and roller, are frequently tantamount in effect to a liberal dressing of manure. There is this difference, however, and it must not be overlooked, the former simply renders the fertilizing matter already in the soil available, while the latter supplies the same matter from extraneous sources; and there is danger of pushing the principle of good tillage too far, for, however fertile the soil may be, the constant removal of crops, without the return of any manure, must sooner or

later impoverish the soil. For our own part, however, we anticipate little danger in this direction; farmers who have enterprise and knowledge sufficient to adopt improved modes of *tillage*, are not likely to neglect the manufacture, preservation and application of manure.

We refer to the subject of the thorough pulverization of the soil at this time, principally to urge upon our readers the importance of possessing proper implements for the economical performance of this important branch of farm labor. The comparative leisure of the winter months on a farm, not only affords a good opportunity for investigating the laws of tillage, but also for getting ready implements for reducing to practice the knowledge thus obtained.

PLASTER FOR PEAS.—A Virginia correspondent of the *Southern Planter* has found great benefit from the use of plaster on peas. He sowed only half a bushel of plaster per acre, after the peas were up. In a few weeks after the sowing, the vines were a much deeper green and were much more flourishing than those adjoining, without plaster. The wheat following the peas was also much better on the plastered land.

HEREFORD CATTLE IN CANADA.—F. W. STONE, Esq., of Guelph, C. W., informs us that he has just imported a very fine herd of Hereford cattle. The Herefords have hitherto received little attention in Canada, and we are glad to learn that so justly celebrated a breeder as Mr. STONE has taken hold of them.

LENGTH OF MANGEL-WURZEL ROOTS.—A correspondent of the *London Mark Lane Express* states that underdrains, three feet deep, had been choked up by the roots of mangel-wurzel. This shows that the roots of this crop penetrate to a great depth when the soil is loose.

TWO BUSHELS FROM ONE POTATO.—Having seen several large yields of potatoes chronicled in your valuable paper, I thought it might interest some of your numerous readers to know how many potatoes had been produced from one. Having procured one of the *La Plata* potatoes, it was planted upon ground which produced turnips the preceding year, and, when harvested, yielded two bushels of good potatoes. Can any one do better from one potato?—E. FOLSOM, *Harmony, Me.*

TO CLEAN TAINTED BARRELS.—The best method for cleaning tainted barrels is to put one peck of charcoal and one teacup of saleratus into each barrel, fill them up with boiling water, cover tight, and let them stand until cold.—JANE TEN EYCK, *Marion Co., Ill.*

MEMORANDA FROM DOWN EAST.

METEOROLOGICAL.—The weather during November was unusually mild, and favorable for farmers giving late fall feed and pleasant weather for finishing the autumn work. The monthly mean was 39.4°, being 3½° warmer than for the same period in 1859. Extremes were 67° and 16°; the warmest day, 1st; coldest, 25th. Grasshoppers were numerous and lively on the 9th. Ground closed for the season on the night of the 24th; two inches of snow fell. No sleighing.

The mean for December was 21°, or 6° warmer than for December, 1859. Extremes, 37° and 7°; warmest day, 1st; coldest, 14th. Sleighing commenced on the 11th, and continued through the month. Depth of snow fell for month, 18 inches. Mean for Christmas week, 26°, against 4° below zero for the same period in 1859. Yearly mean, 44⅓°

MARKETS.—The produce market continues favorable for farmers. Pressed hay sells at $16 per ton; oats, 40 cents per bushel; potatoes (white), 40 cents; apples (Baldwin), 50 cents. Boston firms have agents in this city and in Bangor, purchasing and storing large quantities of potatoes.

BORDERING FOR FLOWER POTS AND BOXES.—A very pretty and cheap bordering for boxes and pots containing house-plants may be formed by cutting and inserting slips of chamomile in the earth around the edge of the box or pot, which will soon take root easily, and, by being pruned, will soon grow sufficiently for its depending stems and branches to cover the outside of the box or pot. Old and unsightly pots and boxes may thus be made to assume a pleasing and tasteful appearance.

PLASTER FOR POTATOES.—Plaster of Paris, or gypsum, or, as it is scientifically termed, sulphate of lime, is made use of to considerable extent, and with a good degree of success, among our farmers, in potato raising. Old, worn-out grass fields are made to produce a good crop of potatoes, without other manure than an application of plaster. It is considered particularly beneficial during a dry season, probably from its ability to attract or retain moisture; and its peculiar virtues are supposed to be lost, or nearly so, after the first season. Part of our plaster is brought from the Provinces and ground in mills in the vicinity, and part is brought in casks, already ground. The Eastern Provinces are great producers of this esculent, the soil seeming to be peculiarly adapted to its cultivation; perhaps the reason being because of the soil containing a proportion of the sulphate of lime.

OX-EYE DAISY.—Some one inquires for the most effectual mode of destroying the ox-eye daisy in fields. *Per contra*, my neighbor seeded three acres entirely with it the past season, considering it valuable for hay. What say the *Genesee Farmer's* correspondents?

The New Year, January, 1861, has commenced warm, with a snow storm on the 1st and good sleighing. On the 3d, a heavy snow storm.

Belfast, Maine. GEO. E. BRACKETT.

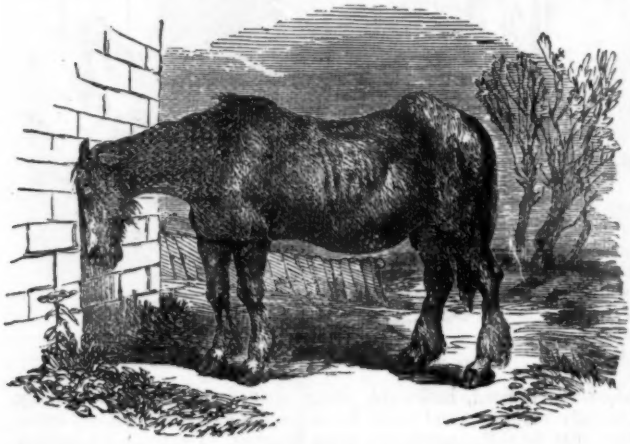
SPRING WHEAT IN LOWER CANADA.—An esteemed correspondent in Montreal mentions a crop of Fife spring wheat, sown on the 29th of last April, which produced 49 bushels per acre.

DISEASES OF THE HORSE.

We are indebted to Messrs. D. Appleton & Co., of New York, for advance sheets of a work published by them, entitled, "The Illustrated Horse Doctor." We make a few extracts:

Staggers.—Staggers mean no more than a staggering or unsteady gait; any incapacity in the limbs to support the body. It therefore, by itself, represents only that want of control over voluntary motion, which generally accompanies injuries to the brain. Mad and sleepy staggers represent only different symptoms or stages of cerebral affection. Sleepy staggers implies the dull stage, which indicates that the brain is oppressed. Mad staggers denotes the furious stage, when the brain has become acutely inflamed.

There is but one origin known for staggers, and



SLEEPY STAGGERS, FROM OVER-GORGING.

that is over-feeding. Carters take the team out and forget the nose-bags. The omission is not discovered till far on the road. No thought is entertained of turning back. The poor drudges, consequently, have to journey far, to pull hard and long upon empty stomachs.

When home is at length reached, the driver thinks to make amends for neglect—the rack and manger are loaded. Such animals as are not too tired to feed, eat ravenously. The stomach is soon crammed; but fatigue has weakened the natural instincts, and domestication has taught the horse to depend entirely on man. The creature continues to feed, till a distended stomach produces an oppressed brain. An uneasy sleep interrupts the gormandizing. The eye closes and the head droops. Suddenly the horse awakens with a start. It looks around, becomes assured, and takes another mouthful. However, before mastication can be completed, sleep intervenes, and the morsel falls from the mouth or continues retained between the jaws.

This state may continue for days. The horse may perish without recovering its sensibility; or mad staggers may at any period succeed, and the animal exhibit the extreme of violence.

Mad staggers equally results from carelessness in the horse-keeper. The animal, which gives itself up entirely to the custody of man, too often experiences a fearful return in recompense for its trustfulness. Any neglect with regard to the feeding of a horse, may entail the worst; and a most cruel death upon the inhabitant of the stable, is too often its reward. The groom, perhaps, may slight his work, lock the stable door, and hurry to his beer-shop, leaving the lid of the corn-bin unclosed. The horse in his stall, with his exquisite sense of smell, scents the provender and becomes restless. His desire is to escape from the halter. With fatal ingenuity the object is accomplished, and the next moment the animal stands with its nose among the coveted oats. It eats and eats, as only that being can whose highest pleasures are limited to animal enjoyments. After a time it becomes lethargic; but from that state it is soon aroused by a burning thirst. The corn has absorbed all the moisture of the stomach, the viscus being dry and distended. Pain may be felt, but thirst is the predominant feeling. Water is sought for. None is to be found; and the sufferer takes station near the door, to await the appearance of his attendant.

No sooner is the entrance opened, than the quadruped dashes out. With all speed it makes for the nearest pond. There it drinks the long and the sweet draught few in this life can taste; but to know which is to die a terrible death. The corn swells more with the liquid imbibed. The stomach is distended to the uttermost. Continued tension causes inflammation. The brain sympathises, and the horse speedily becomes acutely phrenitic.

There is, however, a strange symptom, in which two disorders appear mingled. The sleepy fit is not entirely removed, nor are the violent symptoms fully developed. The horse, in this condition will press its head against a wall. In doing this, it only displays an impulse common to most animals in the sleepy stage; but the peculiarity is, that the eye may be half unclosed and the limbs vigorously employed, as though a trotting match were going forward. The breath will quicken and the creature be coated with perspiration. This attitude and motion may subside, and recovery may ensue; but commonly the quadruped drops, moves the limbs as it lies upon the ground, and is only quieted by death. In a few instances, horses have left the wall to exhibit the utmost violence, and to sink at last.

When grain has been gorged during the night, the animal must be rigidly kept from drinking. A quart of any oil should be immediately administered. A pint of oil is the ordinary dose; but here there exists more than an ordinary disease. Besides, much of the fluid will sink between the grains and, probably, not half of it will reach the membrane of the stomach.

Oil is preferable to the solution of aloes, which

is generally given, inasmuch as it will not act upon or swell the grain so readily as any medicine dissolved in water. Should no amendment be detected, in six hours repeat the dose. In another six hours, give another dose with twenty drops of croton oil in it. When another period has elapsed, should no improvement be noted, give thirty drops of croton in another quart of oil. Should none of these drinks have taken effect, the round must once more be gone over. However, at the slightest mitigation of the symptoms or even suspicion of amendment, stop all medicine at once. The altered aspect of the horse is the earliest symptom that the distension is relieved.

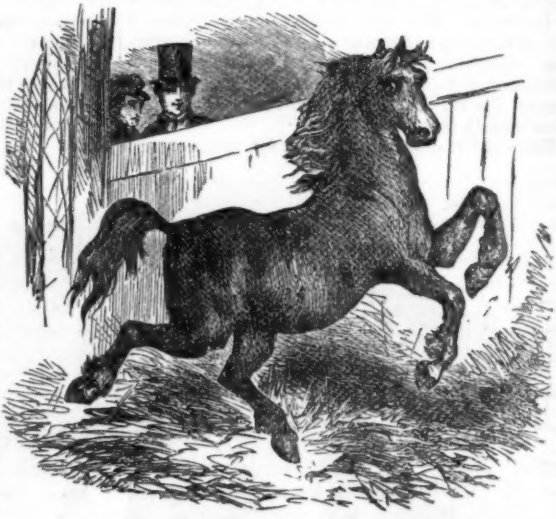
The signs that announce the advent of mad staggers, from whichever cause the disease may arise, are always alike. The lid is raised, and the eye assumes an unnatural brightness. The nasal membrane reddens; the surface becomes as hot as it was previously deficient in warmth; the movements are quick and jerking. The breath is no longer laborious; it is rapid, sharp, and drawn with a kind of panting action. The whole appearance is altered. The characteristics of approaching frenzy can hardly be mistaken.

Then comes the most painful duty of owership over life. The proprietor has, then, to make a speedy choice, whether his dumb servant is to take a desperate chance and undergo a torture, for which the concentrated pleasure of many lives could not atone, or be deprived of the fatal power to injure others and itself. Humanity would unhesitatingly pronounce for death, and, in this case, there is need of haste. The symptoms are so rapidly matured, that, in ten minutes, the poor horse may be sadly hurt and bleeding, panting and rearing in the centre of a desolated stable. A mad horse is a terrible object! Its strength is so vast that ordinary fastenings yield before it; but, the animal, even when deprived of reason, wins our respect. Suffering will find expression in energetic action. Man, when a tooth is about to be extracted, generally clinches

COUNTENANCE OF A HORSE WITH HYDROPHOBIA.

something; but what were a hundred teeth to the agony which causes every fibre in the huge framework to quiver. The perspiration rolls off the creature's body. The eye glares with anguish, not with malice; the body is strangely contorted, but there is no desire to injure. Who, contemplating such a picture, could forbear speaking the word, which should grant peace to the sufferer, although the order necessitate some violence to the feelings of him who is invested with the power to command.

HYDROPHOBIA.—This is always the fruit of contagion, received from some stable pet, in the shape of a dog or cat. The nervous system is always highly developed. The horse starts at the smallest sound, trembles violently without a cause, flies



THE HORSE DURING THE MAD STAGE OF STAGGERS.

backward, hangs upon the halter, stares wildly, and bursts into a copious sweat without any apparent reason being detected. The neigh is squeaking, and the face at the commencement is characterized by immense anxiety, which is soon changed for a peculiar aspect of cunning, mixed with grinning ferocity.

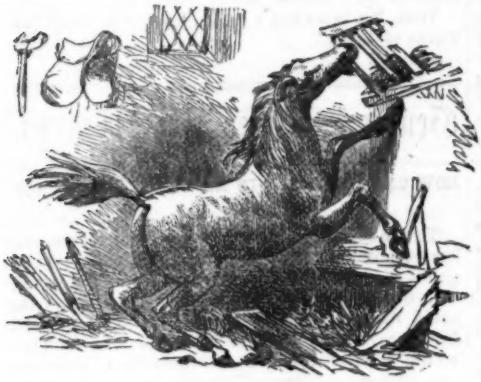
Rarely, however, all the foregoing symptoms are absent. The horse is harnessed and taken to work. Suddenly it stops, appears stupid, and threatens to fall. In a short time it recovers, and the labor is proceeded with. The fits occur again and again. At length they end in violent shivering. When the tremor ceases, the recognition is not perfectly recovered. The breathing is quick and sharp; the eye bright and wild. The animal is turned homeward, but seldom reaches the stable before the furious stage begins.

Hydrophobia is commonly matured before the expiration of the sixth week. A fortnight is the earliest period of its appearance; but some writers have asserted that the imbibed virus will remain dormant for twelve months. The writer has no experience which justifies the last opinion.

Whenever a suspicion of this incurable and horrible disorder is entertained, place the horse by itself in a building with bare walls, but capable of being looked into through a window. Put food and water in the house, and, if the door be not strong, have it barricaded. Let no one enter for at least three days, as, during this disease, the

horse is both mischievous and dangerous. The pain is such that it seeks relief in destruction. All breathing and moving creatures first attract its rage; but, wanting these, its frenzy is expended in breaking, rending, and scattering inanimate objects. Its ability to destroy is only limited by the duration of the disorder.

Let as few people as possible be near the hydrophobic horse. The quadruped's nerves are then alive to every impression. The presence will be detected, though the person be assiduously concealed. The sound of breathing even adds to the torture. Keep all people away but one; and that one should be the best shot in the neighborhood. let him approach, aim steadily, and pull the trigger; for a bullet well placed is the only remedy the author knows which can stay this fearful disorder.



THE DESTRUCTIVE IMPULSE OF HYDROPHOBIA.

ITEMS OF AGRICULTURAL EXPERIENCE. No. I.

1. All soils are benefitted by underdraining, unless the subsoil is gravelly or porous enough to form a good drainage of itself. But the benefit of drainage is most apparent when applied to soils of a clayey nature, or having a subsoil retentive of moisture.

2. After drainage, subsoiling and thorough pulverization are the chief means to be employed to secure good crops on clay lands.

3. There is no soil so poor and sterile but some means may be found to ameliorate it, and recuperate its wasted fertility.

4 Blowing sands may be made productive by spreading a thick coat of straw over the soil to remain a year or two till decayed, and then seeding clover on the straw without plowing, and afterward pasturing sheep on the clover.

5. Lime is not beneficial as a manure when applied to strong clays.

6. Seeding land to clover, and feeding off the clover by stock on the ground (sheep especially), is the cheapest and easiest mode of enriching the soil. According to Von Thaer, it adds 20 per cent. to its fertility each year.

7. Green crops plowed under are powerful auxillaries in rendering a light soil fertile. But if this is done too often successively, it eventually renders the soil too carbonaceous—i. e., too full of vegetable matter.

8. The productiveness of the land depends greatly on the nature of the subsoil. If that is cold, wet and poor, all efforts to improve the soil will be labor in vain unless recourse is first had to under draining.

9. Lands naturally fertile soon lose their fertility by growing successive grain crops on them, unless the organic elements abstracted by the crops are again restored to the soil in the shape of manures.

10. Deep plowing is beneficial on all soils that are not wet, and is the most so when done in the fall.

11. Two successive grain crops on the same ground leave the land in a foul state.

12. Summer fallowing, although apparently a waste of land and labor, is the most efficient means we have of preparing clayey soils for wheat. It ameliorates the soil, enables the seeds of all weeds to sprout and be destroyed, and, by constantly turning and exposing the soil to the sun and air, renders the inorganic elements contained in it more readily available to the roots of the wheat plant.

13. Barn-yard manure is best to be composted before it is applied to the land. It has then a greater value, weight for weight, than when in the long or unfermented state.

14. All concentrated manures, as guano, bone dust, sulphate of ammonia, etc., should be used sparingly at a time, and with a cautious judgment, and are best applied on or near the suface.

Hamilton, C. W. J. MACKELCAN, JR.

PLOWING IN GRASS SEED.

Eds. Genesee Farmer:—In the January number of the *Farmer* I noticed an extract from the *New York Tribune*, in which it is recommended to plow in grass seed. You very justly take some exceptions to the article, and suggest that your readers try the experiment, at first, on a small scale. I would be willing to risk my reputation as a prophet, that if the first experiment be a small one, the next will not be very extensive. It surely is scarcely possible to make a greater blunder in farming than to put grass seed in to the depth, even, of ordinary plowing, to say nothing of the proper depth.

Experience and correct observation will certainly show three things, at least, in reference to the matter of sowing timothy seed: First, autumn is the best time to sow it; second, it succeeds better with rye than with any other crop; and, thirdly and emphatically, on the surface is the proper place to sow it.

After the harrowing and rolling have been completed, and before any rain falls, if possible, sow your seed on the surface, and give yourselves no uneasiness about its not getting in to a proper depth. The exception to this general rule, is that when the season is rather late, the ground very dry, and no prospect of warm rains, it is best to defer seeding till spring.

Rye is the best crop to seed with, because it is less liable to lodge than other crops. Lodged spots in heavy grain crops will almost invariably smother and kill the young and tender grass plants. Hence the suggestion of the *Prairie Farmer*, that oats is

the best crop to seed with, is a grand mistake. Oats, with their luxuriant and dense growth, are ill adapted to the protection of tender plants; on the contrary, they are one of the surest exterminators of such. The principle that the great growth and dense foliage of oats afford opportunities to facilitate the growth of plants, would lead us to suppose that Indian corn would succeed best in a thick forest.

If the object in deep seeding is to find sufficient moisture to cause the seed to germinate, we reply that being so far under the surface is so inconsistent with its nature that it must necessarily be feeble, and its consequent feebleness will effectually prevent its penetrating the dry and parched surface. Besides, when the ground is dry at seeding time, the surface is composed almost entirely of clods, large and small, and it certainly would be unreasonable to suppose that so minute a plant as a young timothy stalk should be able to pierce so dense a substance as a dry clod, and consequently, when it strikes one it must turn in a horizontal direction until it gets beyond it. It then starts upward, and strikes against another, goes round it, and so on till it gets out. Now, supposing the seed is six inches under ground, the plant would require to be a foot or more in length before it could reach the air. He who presumes that it will ever reach it, is doomed to be disappointed.

Another object to be gained by deep seeding, is to prevent the plants from being thrown out by the frost. It is said that there will be one set of roots where the seed was placed and another on the surface, connected by a fibre, which is to resist the action of the frost. But it does not seem to have occurred to those who believe in the efficacy of this plan, that the frost values a fibrous root of that kind as lightly as old Samson would a thread of modern shoddy, for he can raise houses off their foundations as easily as did the mighty man of old, and it would require log-chains instead of fibres to cope with his mighty strength.

Ohio, Dec. 24, 1860. TIMOTHY GRASS, JR.

FEEDING HOGS—FATTENING PIGS.

Eds. Genesee Farmer:—I see by your January number that a "Young Farmer" wants somebody to "ease his troubles" and "correct his errors in the management of hogs." An article from my pen is referred to as the basis of some of his unsuccessful experiments, and hence I feel called upon to come to his relief.

One error which he seems to have fallen into, is that because John Skaats and some others have succeeded in making cheap pork from *pigs of a peculiar cross*—bringing them up to 400 lbs. at ten months old—he can do the same thing with *any breed!* Aware that some breeds fatten easier than others, and that some come to maturity earlier, I was particular to state that John Skaats' success was with about an equal cross of Byfield and Suffolk. Our young friend made his experiment with Suffolks,—a very small breed—and "there is a difference of 250 lbs." which he can not account for.

Then, he may err in the *mode* of preparing food for his pigs. He may give it *hot*, while Skaats waits till it ferments a little before feeding it.

He may err in his mode and time of feeding. Giving "meal for breakfast and supper" certainly would not be likely to make a "dinner of potatoes" relish. Skaats feeds *regularly*, *five* times a day: at 5 or 6 o'clock in the morning, at 9, at 12, at 4 or 5, and again at 9 in the evening. He *mixes* his feed, so that its quality may be as *uniform* as possible.

He may err in the time of *beginning to fatten* his pigs. Skatts never *begins;* he always keeps them fat.

Then, the *quality* of his *cheap fed* pork—"running away in the pan"—may be largely due to some of the "errors" above hinted at.

True, "it is no boy's business to understand the wants of hogs." ‡‡ L. S. ‡‡

Attica, N. Y.

Genesee Farmer Prize Essays.

HOW CAN THE LABOR IN A FARM-HOUSE BE LESSENED?

To the farmer's wife, whose life is one of unceasing care if not of incessant toil, an answer to this question is fraught with interest. In the first place, care on the part of each member of the family to avoid making unnecessary work is requisite; and this care it would seem that due consideration would always prompt. If there is a place for everything, and everything is, after being used, returned to its proper place, not only will the labor be lessened, but harmony in the family will be much more likely to prevail.

The construction of many farm-houses is such as to render them very inconvenient for the performance of the labor required; while their owners are so deeply involved in debt as to render it out of their power, however much they may desire it, to supply themselves and families with the modern labor-saving implements, which as time advances are brought into use. Still, small conveniences which common ingenuity can devise, and the expense of which is trifling, facilitate and greatly lessen the labor of farm house-keeping. For instance, a butter-worker, even though the dairy is small, will save the expenditure of much strength and cost but a few shillings; a shelf in the cellar-way will save hundreds of journeys to the cellar, and thousands of steps for the weary feet, as well as some back-aches and shoe-leather; and a sink for draining dishes instead of wiping them, in a large family, will save some hours of time daily.

Again, much time and vexation, if not labor, may be saved by the proper arrangement and division of the labor amongst the different members of the family. Where two are depended on to do the baking, the bread will be very likely to be over or under-done, for there is much truth in the old proverb, that "many cooks spoil the broth."

Specific rules can not always be profitably applied in relation to the conducting of household affairs, but all will find that "not to put off till to-morrow what ought to be done to-day," is one that will admit of no exceptions; for, by deferring our present duties until the future, we, as one has said, "overcharge the morrow with a burden that belongs not to it;" "we lade the wheels of time and prevent them from carrying us along smoothly."

S. G.

FARMERS' SONS.

"What means can be best employed to prevent farmers' sons from deserting their fathers' profession."

The answer which seems most naturally to present itself to this question, is *educate* them. In fact, this is the real answer, for every kind of labor that is done on or for the farm brings to the mind of the educated operator some interesting principle of philosophy, physiology, geology, or chemistry. There is no occupation that allows so much leisure to think, study and reflect and, if the mind and body are well educated and disciplined, no occupation becomes so delightful. The causes of dew, rain, hail, snow and wind, the lightning, thunder and hurricane, the thermal, hygrometric, and electric condition of the atmosphere, these are all made plain to him, and become subjects of the greatest interest, because they effect more or less his labors and their results.

But this word *educate*. What does it mean? Webster says, "To bring up as a child, to instruct, to inform and enlighten the understanding." This is a limited definition, and does not by any means express the whole import of the word. Education should not be, and is not, confined entirely to the mental faculties, for do we not learn to walk, to use an axe, a hoe, to write, to play an instrument, to ride a horse, to walk a rope? The intellect has little to do with the mechanical part of these performances, for persons of very small intellects often excel in them. But still, most of these, and thousands of other manual operations, are very essential in the farmer's education. It is a lamentable fact that education at the present day is entirely too limited. Not that the sciences are not sufficiently taught in our schools and seminaries, but that this other part of man, the physical, or, I might say, the mechanical, is lost sight of in the eagerness to accomplish something popular and showy. And here lies the great difficulty, and the real cause why the manual labor upon the farm becomes so distasteful to the scholar.

The tone and power of the muscles depend entirely upon their use; they may be weakened by over-exertion, but without exercise they are powerless. Nature will not tolerate a misuse or a disuse of any part of the animal system. The amazing feats of agility and strength which we witness in the circus performer, in the city poster, the music player, the rope walker and the prize fighter are but results of the education of the muscles, and the thousands of cases of men weary and out of breath on walking rapidly a few rods, or with a few strokes of the axe or scythe, are but the natural results of the lack of it. When the muscles are educated and developed, their vigorous use is neither distasteful or fatiguing. The woman who had been inured to muscular exercise looked out upon the mowers, and lamented that she was compelled to "knit, knit," while the men could mow, "swing, swing—such easy work!" The learning to write is an interesting example of muscular training. The requisite position of the hand is a most awkward and uncomfortable one—so much so that the tyro can not keep his pen moving on the paper for five minutes at a time without great pain. In fact, the correct position of the hand and fingers is not acquired without long and wearisome practice; but it at last becomes to the clerk and accountant perfectly easy.

Farmers' sons who are sent from home to be educated come back scholars; but, as a general rule, they have, by a disuse of the muscular system, lost all relish for labor, and, as the routine of instruction in our high schools does not include the sciences connected with the farm, it is no wonder that they prefer to study the learned professions or become merchants.

With this view of the case, the remedy at once suggests itself. Educate them mentally and physically in everything that pertains to the science, profession or labor of farming.

How shall this be done? This question is not so easily answered. There is much talk about agricultural schools and colleges. I know not what will be the result, but I fear that the manual labor of the farm will not be popular in them, and that the sciences of most interest to the farmer will not be the leading ones there. But I go for agricultural schools. Even the name will have some good effect. Once cultivate a taste for study and investigation, and supply him with the requisite books and periodicals, and your son, if his habits are good and well established, will help himself to a vast amount of information that will add much to the interest of the occupation and be a great stimulous to labor and research. Encourage popular lectures, agricultural journals and farmers' club meetings these long winter evenings. They can not fail to be of much benefit. Above all, instil into his mind the dignity of labor, and the necessity of uniting it with study in order to the full development of the *perfect farmer*. S. B. P.

Muskegon, Mich.

ON FARMERS' CLUBS.

Union is strength. An old proverb reads, "Two heads are better than one, if one is a blockhead." Man is gregarious, and association with his kind makes him stronger, wiser and better fitted to meet the responsibilities of his particular station.

Farmers, from their naturally isolated position, are less acquainted with each other than the members of any other profession, although their occupation is the one to be the most benefitted by a knowledge of the means most successfully employed by their co-laborers.

One of the farmers' most useful coadjutors is the Farmers' Club. It is there he discusses important events connected with his profession, meets his neighbor in social converse, learns his method of operation and its results, gives his opinions and hears the views of others, reads the last agricultural books and papers, keeps himself interested in his occupation, and, in a word, keeps "posted" in everything pertaing to his profession.

Farmers, as a class, are opposed to innovation, and the immediate formation of a club in most localities will hardly prove successful. As a preparatory movement, let three or four farmers in a district meet by invitation at each others' houses once a week during the winter season, and have a good old-fashioned chat about the affairs of their orchard, garden and farm. Persevere, and by and by others will drop in to talk over matters, read the different papers, latest market reports, etc. Thus will be collected material from which a club

may be constructed the next winter that shall exercise a salutary effect over the whole neighborhood.

The farmers' club is the farmers' lyceum, and the less formality observed in the discussions, and the least parliamentary usage adhered to, the greater the benefit likely to be derived. A nucleus for a library, which is a necessary appendage, may be formed of the Patent Office and State Agricultural Reports, which are usually attainable; then let each member loan at least a $1 book to the library, with a privilege of withdrawing it when he ceases to be a member of the club. These, with the various periodicals taken by the members and by the club, will form quite a library and a range of reading chiefly devoted to the subject. The benefits likely to accrue from such associations can not be over-estimated, and it is to be hoped that many such will be organized this winter, the results of which will be their best exponent. GEO. E. B.

Belfast, Maine.

BEST KIND OF HORSES FOR FARMERS.

With the present mixed races of both man and horse, it is a difficult thing to suit many dealers or supply the true wants of the farm. Among the different breeds of the horse at the present time, there are many good qualities, likewise *some* evil or indifferent. The farmer who would like the Morgan race would dislike the Sampson or Clyde. One farmer seeks a brisk traveling team; another does not care for speed. Some farmers make use of their teams as though they were got to be used,—calculating to make them return, in part at least, the original cost, and to pay their present keep or expense. Others, again, make a pet or plaything of the horse, and do the labor themselves. Wherever the wrong in either extreme, is not for me to apply, as each person has, or ought to have, sufficient intelligence to know that his animals are subservient to him, and that there is considerable invested in them. A good team is the pride of any farm, and to keep them good is the pride of man.

Here is the point on which many differ. The idea of good horses implies something else than good looks. Perhaps I may be isolated in my views of what I judge requisite for farm work. How that is, let us see.

All farmers know that it is a pride to have a very strong span of horses—a boast that they can draw great draughts, and do it easy. It is also a pride to know your team are fast walkers, and thus accomplishing much in little time. A good team for farm purposes is that which brings in the greatest profit for the money invested, or performs the most labor on the same care and conditions. Good horses are deserving humane masters; they deserve no neglect.

For the farm, it is very necessary to have a good supply of the muscular, strong endurance, a patient disposition, calm, mild and gentle, not easily unstrung or frightened. They should be of just that disposition that, when tugging at a dead weight, at even the tenth trial to accomplish they will show the same willing, cheerful spirit. A farm team should not be less than 1,100 lbs. weight each, nor over 1,300. As to form, were it possible to find such, a compact, heavy-quartered team, weighing 1,200 lbs. each, of good disposition and constitution, would suit me very well.

It may be true that in small horses we find greater personification of courage, ambition and will. I have seen many small teams as near perfection as could be, seemingly; yet the objection always arises, "Too light for the farm." Suppose we place such a team to breaking heavy sward ground, what is the result? "Ah," says one, "put on a third horse." This is not always possible or prudent. The man of a small farm can hardly afford to keep an extra horse. He finds it better to have a little more power in the team. Then he is certain he can move light weights, and is not fearful of heavy bodies.

The extreme of the light animals in want of power being an objection, likewise is the extreme in the heavy ones an objection. The latter require more to sustain them than is profitable to the owner, and they are more liable to be slow and intractable. Every farmer should be his own judge of his wants in the team. If he intends much heavy labor, his team should correspond, and *vice versa*. Every horse is found wanting in some particular. Hence, it follows that we must choose those embodying the *most* natural qualities, and then perfect the wanting essentials by artificial means and devices. W.

ON REARING CALVES.

The best method to pursue in rearing calves, will vary, no doubt, in different sections of the country. In some places, where milk is of little value, the best method would be to let the calf suck the cow. But in most localities, the milk required for the calf the first three months would be worth more for dairy purposes than the calf would sell for at six months old. It may here be remarked, that it is generally admitted to be injurious to a good milker to allow the calf to run with the cow and suck whenever it pleases, and the trouble of letting the calf suck morning and evening is about the same as when fed by hand.

To raise a good calt by hand, it should be taken from the cow when two days old, and fed with new milk fresh from the cow, until it has fairly learned to drink, say ten days old, when a little oat-meal, or barley-meal, and oil-meal may be stirred in. The oil-meal should have boiling water poured on it to reduce it to a jelly, adding, at the same time, a little skim milk heated to the temperature of new milk. The skim milk should be increased in quantity daily, until the calves are three weeks old, at which time all skim milk and about a pint of meal per day may be given. They should have a little good hay twice a day, and clean straw to lie on, until grass is started so they can be turned out to pasture—not with the cows and other cattle, nor into the meadow, to trample the grass under foot until mowing, but into a lot by themselves, with a place fixed for feeding in one corner of the lot.

A good way of constructing a feeder was described in a former volume of the *Genesee Farmer*, which, as nearly as I can recollect, is as follows: Set three posts or stakes in a straight line, then nail a board sixteen feet long to the stakes, the upper edge eighteen inches from the ground. Nail another narrow board to the stakes, leaving a space one foot wide between the boards. Divide this space

into six equal parts by nailing short pieces of board from top to bottom, leaving six openings ten inches wide, through which the calves will put their heads to drink. Then slip a rod or stanchion down through the centre of this opening, securing the head on either side of the rod. This fixture is for feeding six calves, but may be enlarged to correspond with the number to be fed. Troughs made of soft wood, with legs to raise them to the required height, is the best and cheapest vessel to feed in I ever used.

When two and a half or three months old, sour milk may be given in place of sweet. Increase the meal as they grow older, until fifteen or eighteen weeks old, at which time they may be given a quart per day, and milk once a day for a month; when it may be discontinued, as they will do well on meal alone.

To prevent scours, care should be taken to divide the time between each feeding as evenly as possible, and observe uniformity in the quantity given. Let the changes of food be gradual, and provide a shelter for them in cold storms. If one should be taken with scours,—which is seldom the case after the above precautions—two or three tablespoonsful of rennet, such as is used in making cheese, or a little white chalk, will cure them. To prevent them from getting lousy, a teaspoonful of sulphur may be given occasionally. Calves should have free access to water, even when fed twice a day on milk.

In winter, they should be kept in warm, well ventilated stables, and have all the good hay they will eat, with a pint of meal or oats and a feeding of roots once a day, observing regularity as to time and quantity. Calves wintered in this manner will look thrifty and act playful when let out to water. They will not need a boy to lift them up toward spring, nor will it take the best part of the next summer to get them in a growing condition.

A FACT HUNTER.

BEST METHOD OF DESTROYING LICE ON CALVES.

I AM not prepared to write an essay on this subject. Therefore, I will only give the slight experience in destroying lice upon calves which I have gained by having tried a method which has proved successful; but whether it is the best, it is not my province to determine.

The facts of the case are as follows: I had two young, vigorous calves (half-blooded Durham), which I intended to rear for oxen. The larger, and apparently the healthier one, became sick from undergoing a necessary operation, and shortly after I was surprised to observe that his head and neck were well stocked with small brown lice. His mate soon after became lousy too, but not so much so as the first one. I endeavored to kill the lice by greasing the calves all over, and then rubbing it in well. This succeeded in getting rid of them for a time, but in a month the lice were nearly as thick as ever.

It is my opinion that the application of grease alone, as advised by some of the agricultural journals, will not entirely destroy lice on calves,—at least it kills only the living lice. I believe it leaves the nits unharmed, they hatch, and the lice become as thick as ever.

I continued to apply grease occasionally the rest of that season. Upon the arrival of winter, the lice disappeared, and I supposed they were gone; but in that I was mistaken, for in the spring they reappeared. I greased the calves again, leaving it on a day or two to take effect, which it did as usual—killing the live lice. I then washed the calves with warm, strong soapsuds, and scrubbed and scoured them thoroughly with a hard brush for upward of an hour. It acted like a charm. The lice have never appeared since, and it had no injurious effect upon the cattle, only making their skin a little tender for a day or two, which effect I am pretty sure was occasioned by the grease.

Grease and *soapsuds* is the remedy I would advise. The refuse grease of the fry-pan would answer the purpose very well. Red Precipitate will also kill lice. I have been reliably informed that a strong solution of tobacco is an excellent remedy; that it kills nits as well as lice. This may also be effected by the method I have already detailed, and is the important point to be attained.

Harrison, Ohio. HENRY BOWLES.

FANCY TROTTING HORSES AND FEMALE EQUESTRIANSHIP.*

"Are the interests of agriculture truly promoted by societies bestowing their highest premiums upon fancy trotting horses and female equestrianship?"

OUR country is indebted for the race course, I believe, to England, it being early introduced into some of the Southern States, particularly into Virginia, where it exists at the present day as a sort of an institution, adapted in many respects to the wants and tastes of a portion of her people. For wealthy planters and their sons, luxurious in their habits, and living a life of independent ease, the excitement of the fox hunt and the race course seems to them almost a thing of necessity; and although horse racing there has usually been accompanied by betting, it finds apologists up to the present time. Gradually it has found its way into the Northern States, and in this era of wonderful improvements we find it inaugurated at nearly all our agricultural fairs, where it monopolizes not only nearly all the large premiums, but much of the time and attention of visitors also.

These societies are instituted for the improvement of agriculture, by the award of premiums for such articles as possess superior merit over those of the class to which they belong; and the classes, all will allow, should be arranged according to their relative importance to the farmer, and premiums should be awarded accordingly.

Almost the only real benefit claimed for the race or trotting course is, that it improves the breed of horses, the reverse of which we think is true. The history of the English race course proves it to be so. The veterinary surgeon to the Queen, in 1847, said:—"Good horses were never so scarce in England as at the present time, and within the last twenty years they have degenerated so much as

* Several well written essays on this subject were received, all taking the negative side of the question. The Committee recommended the publication of the essays written by C. R. SMITH, of New Hampshire, and by J. C. BASCOM, of Kentucky, and award a prize to each of them.

not to serve the useful purposes they were accustomed to; and even our carriage horses are conspicuous for their long necks, slab sides, and spindle legs;" the very counterpart of which is often seen at our agricultural fairs. Look at Virginia and we can see the exact measure of improvement the trotting course has had during a whole century! She is to-day dependent, in a great degree, upon other States for her supply of valuable horses. Look at one of the most famous horses New England has ever produced; although having the best blood in his veins and almost world-renowned for his speed, his stock, we are informed, are remarkable for unsoundness, and some at least are not of much credit to their "illustrious sire."

Another objection to the exhibition of fast or fancy horses at our fairs is, they crowd out a more valuable class, those adapted to general use, among which are found those possessing many of the qualities of the Justin Morgan—docility, strength, style, action, with fair speed, and what is really worth more to the farmer than great speed, a fast walk.

Still another objection is, they draw off the attention of people, particularly our young men, from more useful objects. Many a farmer has already found, to his disappointment and regret, that the attractions and excitements of the trotting match have given his sons a distaste to the common duties of the farm, and to own or drive the fastest horse and to get the highest premium at the State or County fair is the highest object of their ambition. Exhibitors also complain that their valuable articles and improvements, although highly commended by committees, command but little attention, and do not receive premiums that pay the cost of exhibiting them.

Yet another objection to the trotting course is, its cruelty. For weeks before and after the "grand trotting match" we see boys and fast young men, some of them with rickety, raw-boned nags, "putting them over the course" or through the streets, and the cruel lash is applied by merciless drivers, with the forlorn hope of getting the aching bones of half-starved animals up to a 2. 40. speed! It is no less cruel to whip and spur the noble horse to the utmost speed in the trot or in the race, than it is to overload or otherwise abuse him.

One more objection to their exhibition is, a very large class of our most respectable citizens question the morality of the race course, and will, perhaps, silently but surely, withhold their patronage and attendance from our fairs if connected with it. This fact alone should induce the managers of these societies to hesitate in bestowing their largest premiums in this way. Very much to the credit of the agricultural press, some of its ablest and best conductors forbear to report the doings and results of this department of our horse-trotting agricultural fairs.

Our last objection is, our farmers do not own them, and in fancy horses have no personal interest whatever. A mowing machine, an effective ditching machine or potatoe digger is of more practical importance to them than all the fast horses upon the continent. Roving, plundering Arabs have them; the fox-hunting gentry of England will have them; chivalrous sons of the South and fast young men of the North will have them; fugitives from justice and wild Indians would like them; but a vast majority of the farmers of the country never have had and never will have a particle more of interest in them than in raising grey hounds or rein deer, and therefore should not be obliged to pay their money at the gates of our fairs to encourage or support them.

Fancy horses will have their owners and admirers; and fairs expressly for their exhibition are, in every respect, the places for them; but at our agricultural fairs no premium should be offered or awarded to them. The presence of ladies and their contributions add much to the attractions and influence of our fairs, and no one should wish to withhold either commendations or premiums for any thing really meritorious they may offer; and the question should be well considered, whether premiums might not well be given them for essays upon things which give beauty and comfort to our homes.

Female equestrianism, at proper times and proper places, can not be too highly commended. A more healthful and invigorating exercise can hardly be found. But, young ladies ambitious for public applause would do well to remember that along with the huzzas of the crowd are heard also the low jests of the vulgar; and that laurels won in the midst of a gazing multitude are not more unfading than those which may be obtained in the quietude of their own homes, and that it would be far better for them that their equestrianship should not command a premium than that their delicacy of character should be at a discount.

Haverhill, N. H. CHARLES R. SMITH.

We shall take the negative of this question.—First, we shall notice the fancy trotting horses, and secondly, we shall notice female equestrianship.

The object of all agricultural societies is or ought to be the promotion and advancement of agriculture and stock raising, and consequently the best races of animals for use and sale to the farmer should have the most encouragement. We must admit we all want fast horses, but then we want them to have something besides speed. What we most want is a horse that can go his eight or ten miles an hour for several consecutive hours, and have a respectable appearance, and consequently no premiums should ever be offered by societies for the fastest horse, for this would tend to foster and encourage a race of animals which would have speed alone as a characteristic, to the exclusion of bottom, form, constitution, etc. But, say the supporters of these kind of premiums, "they draw the crowd," and consequently swell the gate fees. Then, shall we cater to the popular will in order to make money, when pecuniary gain is not our avowed object? We say no! But societies ought to have a legitimate object in view in every premium offered. Then again, we believe in this age we are fast enough, without pushing the thing so far that it may embarass other objects societies have in view.

Again, this kind of trials of speed has a tendency to encourage gambling at our fairs, and draws to them a set of fellows that do them no good, except what they pay into the treasury. It may be said, they will bet anyhow! This may be true to some extent; but men of this class must first have something to draw them, and then they

are induced to bet more largely by excitement, and finally this excitement leads to difficulties; and if this course be persisted in the societys' visitors will fall off, and consequently its objects will be thwarted. The tendency of the thing is immoral, and as societies must receive their principal support from the moral and religious portion of a community, they must fall. In Kentucky, we believe, there are but three societies which give premiums to speed alone, and of these, one has already gone by the board, another is almost on the brink of ruin, and the other must fall or desist.

And now for female equestrianship. I have never yet seen in the constitution of any agricultural society that one of its objects was the improvement of our race of females, or that particular societies would have some show of an excuse for offering an encouraging premium to females to display their agility in horsemanship, and the contour of their form, and to be singled out for admiration. But all this would seem to me to belong to another age far back, and to another association hereafter to be named by its admirers, not certainly an agricultural association, which has for its object the improvement of stock and the advancement of agriculture in all its departments. To what department does this belong? We think it would be hard to classify it. But it is not only entirely out of place, but is positively injurious to the cause they are intended to encourage, by giving to fairs the appearance of institutions of mere pastime, and lowering the innocent victims in the estimation of a majority of the community. It is true, large crowds will be drawn to witness such an exhibition, and some to admire, but more to deride.

But let us enquire what good object is to be accomplished by such exhibitions? Females, in this enlightened age, are not required to break and train horses; nor do they engage in the chase; nor do they enlist in war. It is true, horseback exercise is the best of all exercise; but a public area is not the place for a display of female feats, or else we must go to work and change all our notions of female character. Is it possible that the accomplishments and adornments of a female must be judged by their proximity to the ruder, coarser sex? We have always been taught to believe that what is most admirable in woman are her private virtues, her truly feminine adornments, and her fireside accomplishments; and we can not see that any of these truly admirable virtues are in the least encouraged by this public display of her ability in managing the horse. It looks to much like being set up to be bid for, to be gazed at by unholy eyes, to be admired by those who have no busines to admire, and to be laughed at by those who have no business to laugh, but who are licensed by this kind of show. We hope Kentucky fairs, at least, will steer clear of this abomination. One or two societies have tried this abominable way of raising the wind, but have signally failed in drawing in enough victims to make it of much interest.

Beach Fork, Ky. JAS. C. BASCON.

ON THE IMPORTANCE OF FURNISHING GOOD TOOLS FOR BOYS.

The above undoubtedly should have read "*farmers'* boys," for boys who work at other trades, as a general thing, are furnished with good tools. The mechanic or the artisan who wishes his son to follow the same business as himself, would fail of so curing his end if he should give him only old and nearly worn out tools with which to work. The boy would soon be discouraged, and seek easier work. But how often are the farmers' sons sent into the field with the old hoe, the bent scythe, the ricketty cradle, or the broken handled fork; the father only giving as an excuse that it don't pay to give the boys good tools until they learn to do their work well. And thus they toil on, discouraged and wasting their strength in trying to work with the implements which their prudent (?) father would not use himself. But, to one who would look at the subject impartially, many reasons will present themselves, showing the importance of furnishing farmers' sons with good implements of labor.

They take more interest in their work, and consequently it will be a means of inducing them to choose farming as a profession. Farmers often wonder why their sons so early begin to manifest a dislike for farming, and wish to leave the farm and follow some other calling. If they would inquire into the cause, they would find it to arise quite too often from a neglect to furnish them with good tools.

They will do their work easier. In using poor tools less work is performed in proportion to the strength expended than in using good ones, which tends to discouragement.

The work will be done better. This is an important reason, and is of direct advantage to the farmer. The engraver who furnishes his apprentice with poor tools, will not be very likely to find his engravings well executed.

Farmers, furnish your boys with good tools, and you will be amply repaid. If you don't believe it, try it. P.

Greenville, Mich.

KEEPING FARM ACCOUNTS.

"On the advantages of keeping a strict account of the expenses and profits of each product of the farm."

If a farmer keeps a strict account of the expenses and profits of each product of his farm, he can at any time, by referring to his books, ascertain whether a certain crop pays or not, and he can the more easily improve his plans of cultivation. If, for instance, he finds that a certain crop of corn has cost him as much as it will sell for, leaving no profit, he will see at once that it will not do to cultivate corn in that way upon that soil; that, if he intends to raise corn in that field again, he must try some different method of cultivation.

Take two farmers, on adjoining farms, both equally good farmers, the one keeping strict accounts of his crops and the other none at all, the one who keeps the accounts will, other things being equal, make more money than the other. A man not keeping accounts with his crops does not know what his crops have cost him.

If a merchant finds it necessary to keep strict accounts with his customers, I can not see why it is not necessary for a farmer to keep strict accounts with his crops. I have been in the habit of carrying a diary in my pocket, and entering each day all the work that has been done during the day and by whom, and then posting it into a book

where I keep accounts with all my crops, and in the fall and winter, after the crops are all harvested and sold, I foot up the amounts, and at any time thereafter I can tell at a glance whether I have made anything, and how much on each crop, and, by reference to my dairy, I can tell how the crop was cultivated, and how much and what kind of manure was applied. So, by reference to diaries of former years, I can tell whether any difference in cultivation or manuring is an improvement or not.

Haverstraw, N. Y.

WHAT DO WE PLOW FOR?

"WHAT a question! Here we have been plowing for thousands of years to kill the grass and weeds and mellow up the soil, and now some ignoramus insinuates that we don't know what we plow for!"

Hold! my dear friend; this question is not so simple as you perhaps take it to be. It involves also the questions, what do we kill the grass and weeds for? and why do we mellow up the soil? You and I have both observed the good effects of plowing, and are satisfied that we can not till the land successfully without it; but we shall both work more understandingly and successfully when we understand more thoroughly the minutæ of the effect.

Plants require for their vegetation and growth, aside from the presence of all the elements of which they are composed, three special conditions of the soil, viz: a certain degree of heat, depending much on the kind of plant; contact of water to the seeds, and, after vegetation, to the roots of the plant; and also the same contact of the seeds and roots with atmospheric air.

This contact of water with the seed and roots is necessary, first, to produce fermentation, without which the seeds will not germinate; next, as forming a large share of the plant itself, and which it receives through its roots; and lastly, for the dissolving of the mineral elements, without which the plant can not appropriate them to its use. And, though water and air are necessary in contact with the roots, it is also necessary that it should not be confined to them, but that it should in a measure circulate. Nature has provided that in the water there shall always be a little air, and in the air a little water, so that if one be present the other is never entirely absent, and that if the soil be in a proper condition to receive and circulate the water, the air follows it and takes its place as it disappears either upward or downward. She has also ordained that water, although possessing sufficient gravity and fluidity to carry it downward into the smallest crevice or orifice, still if in contact with crevices or orifices of a certain diameter, that it shall always rise in them by capillary attraction as long as the supply lasts.

Some soils in their natural condition, or after having been plowed and lain a long time, are so compact that neither air nor water can readily pass through them either from above or below, and consequently there is little or no circulation, and it wants mellowing up. Other soils are so open and loose that the water sinks too rapidly into them, and the openings are so large that it can not rise by capillary attraction. The best remedy in either case is plowing. In the one case it increases the circulation upward and downward by loosening the soil, and in the other it checks the too rapid circulation downward by breaking up the downward channels.

Furthermore, the air always contains more or less fertilizing gases for which the soil, especially a newly exposed surface, has an attraction; and the oftener you expose a new surface the more it will attract. The rains also attract and bring down these gases, and in passing through a mellow soil, not too porous, these gases are strained out and left in the soil. Thus we can see how the summer fallowing and the summer cultivation of hoed crops benefits the land and the crops.

Then again, plants require not only the presence of all the elements of which they are composed, but their successful culture requires that a portion of them should be in an organized form: that is, that they should have formed a part of an animal or plant, and have been partially decayed or disintegrated, but not fully decomposed and the elements separated. This is the condition of the dark surface mold upon new land, the muck in our swamps, and rotten barn-yard manure. Every plant that grows leaves more or less of this organized matter in the soil, which needs by plowing to be exposed to the sun and air to hasten its decay, and to be thoroughly mixed with the inorganic or mineral elements in the soil. In short, the supplying to the soil the organic matter which is carried off in the plant, and the thorough mixing up of the organic and inorganic portions of the soil, and exposing of them to the action of the sun and the free but not too rapid circulation of air and water, constitutes the sum, substance and essence of agriculture, and in the accomplishment of which the plow acts a sovereign part.

The reason why we mellow up the soil now plainly appears, and the reason why we kill the grass and weeds is plainly seen to be, that while in life they would choke and rob the plant we would raise, by their death and decay they furnish it with its necessary food.

S. B. P.

Muskegon, Mich.

WHAT DO WE MAKE UNDERDRAINS FOR?

WE will give three reasons for underdraining, either of which, in some certain soils, would in our opinion justify the expense:

First. It draws the surplus or stagnant water down from the roots of the plants, which, in some soils would otherwise remain there, till the plants would be greatly sickened or totally destroyed.

Second. By drawing the water down from the plants, they lose no time but grow ahead; and, if there should come a drouth, the water will again come back by capillary attraction, to the great nourishment of the plants, while those on a lot not underdrained will wither and die

Third. Drawing the water from the surface will leave the soil in a porous or mellow condition; thereby enabling the little rootlets to penetrate in every direction and gather food from every part of the soil. It will also permit the warm air to circulate freely through the soil, thereby warming it and leaving certain gases which are good for the health and nourishment of the plants.

The above are, in my opinion, the principal and main reasons why land should be underdrained.

Newcastle, Lawrence Co., Pa. WM. RENO

ON THE CULTIVATION OF INDIAN CORN.

It is not the object of this essay to ascertain how much corn, by high manuring, may be made on an acre or two of ground, but how it may be produced most cheaply and conveniently as a staple crop, and leave the land in the best condition for a rotation of crops on the farm.

As Indian corn is the crop mostly depended on in this country for raising stock and breading our families, any suggestion as to how it may be increased, or how it may be more easily raised, becomes a matter of great importance.

Take a field that has lain in clover two or three years, spread on it all the available manure on the farm,—the most on the poorer places—and plow it in deeply in the fall or winter. To trench plow it would be better—that is, start one plow and turn over a furrow, and start another one after it in the same furrow; the second furrow of the first plow will turn the sod to the bottom of the first furrow, and the second plow by its second furrow will cover the sod over. In this manner plow the whole field. This method, if the subsoil be rich in the food of plants, will be a great improvement over the common method. In tthe spring, nothing will be needed but to harrow well, lay it off and plant.

It is not agreed among farmers which is preferable, to lay the land off each way, or to plant in drills one way. Perhaps more grain can be made by planting in drills, but it is thought that it requires more labor to cultivate it. If we are weak-handed and have level land, perhaps it is best to plant so that we can cultivate each way. By plowing and cultivating each way, it requires but little labor with the hand hoe. But if the land be rolling and liable to wash, it is best to plant in drills, as it is then easier to cultivate and less liable to wash away.

There is great difficulty in knowing how much corn to leave on the land. If the rows are too close together and too much is left in a hill, a dry season will nearly ruin it. The distance apart and the number of stalks in a hill must be regulated by the strength of the land and the size of the ears of corn. Small corn may be planted closer together, and a greater number of stalks may be left in a hill; larger corn must be planted further apart and fewer stalks in a hill. Large corn, in this climate, is to be preferred, even if we make no more to the acre, because it is easier handled and can be done in a shorter time. I would say, on common land, that it will bring 50 to 60 bushels per acre. Four feet apart each way and two stalks in a hill will be about right. This distance would make about 2,700 hills to an acre; two ears to a hill would be 5,400 ears; 100 ears to a bushel would make 54 bushels per acre. If the land is strong enough to produce more, let it be planted nearer together, or leave more in a hill, or both. But if the land will not produce so much, plant wider. More grain is lost by planting too thick than too thin. When the proper quantity is left on the ground there is less danger from drouth.

The above is not near so much as has been made, but is more than an average. Much larger crops have been made by high manuring, or on very superior land. We started out to say how corn can be most cheaply and easily raised in connection with other crops, which, I think, is the great desideratum with farmers.

After a field has been cultivated in corn, as above, it makes an excellent preparation for wheat, rye, or oats. Should it be sowed in either of these crops, in the spring it should be sown thickly with clover, and lie in pasture two years. The second year that it is grazed the second crop should go to seed, then manure as above stated, and plow under the clover and manure as before, as a preparation for corn. This rotation will require four fields, and will be cultivated thus: corn, wheat, etc., clover, clover, and the fifth year corn. By this rotation, our land will regularly increase in productiveness, not only in corn, but in wheat, rye and oats.

A very profitable rotation for corn with us, is corn fed down to hogs. A few days before the corn is consumed, sow the field in rye; the hogs will put the rye in. The cultivation of the corn will be a good preparation for the rye. The next season, after the beards of the rye are somewhat rotted, turn in the hogs and let them consume it. This makes an excellent feed for hogs, and all is left on the field that grew upon it for manure, except what is driven off in fat, etc., in the hogs. When the fall rains come the rye will spring up and make an excellent fall and winter pasture for any kind of stock, especially calves and sheep, until February, at which time everything should be turned off, and, as soon as the land is in proper condition, plow and harrow for corn the ensuing season. In this way our land will regularly increase in productiveness, and it will be in a profitable crop every year.

I think it is very clear that the method herein directed is more profitable, and greatly to be preferred by farmers generally, than highly manuring some two or three acres, at the expense and neglect of the balance of the farm, though the manured acres may make a considerably increased crop. To have the whole farm in profitable crops of either grain or grass, and a regular improvement in fertility going on in the whole, constitutes the great art in profitable agriculture.

I would remark, that when cultivating corn, when it gets up from waist to shoulder high, I would not plow too close and deep, that I might not break the roots too much in dry and hot weather. In the dry and hot season of 1856, I plowed a field in the furrows next the corn with a wide shovel plow, with only a shallow furrow, split the middles, and with two furrows, with a narrow shovel plow,—a bull tongue—as a deep as a strong horse could pull it. The roots had not run across the row, and therefore were not broken. While other fields had had their roots cut by plowing, and were suffering with heat and drouth, this field was green and flourishing and produced a fine crop. I would further remark, that I would prefer to keep the land between the rows as level as possible, as I believe it retains the moisture much better than when left in ridges.

When the corn is glazed, we usually cut it at the ground and put it in shocks from fourteen to sixteen hills square, tie it round and let it stand until it is dry enough to keep, then shuck it out and put it into the crib. The fodder stalks we again put into shocks and let them stand until needed, when we have them fed so that the litter and manure can be returned to the fields. The stalks and blades make excellent fodder for horses and cattle.

Chesher's Stone, Ky. A. G. MULLINS.

ON THE BEST METHOD OF EXTERMINATING CANADA THISTLES.

Canada thistles may be effectually destroyed by mowing, summer fallowing, and hoeing. Each of these methods may, under some circumstances, be better than either of the others.

Mowing, about the first of July and the first of September, will put an end to them as long as the field lies to grass; but when broken up, they will again show themselves, as the seed will lie in the ground several years and grow when brought to the surface, and will again require the use of the scythe.

Plowing and harrowing will destroy them, if repeated often and continued from May until September; and then it is better to break up sod ground deep the fall before, as you have the land in better condition, which is more likely to render the experiment successful.

As a general rule, I prefer hoeing. I would plow the ground in the fall deep and coarse, then again in the spring plow and harrow, plant to potatoes, and hoe two or three times, taking pains to pull out the thistles among the tops. After the last hoeing, I would go through the field once in ten or twelve days and cut up the thistles, until it is time to dig the potatoes. After digging, the ground should be plowed deep once and perhaps twice, and in the spring plowed and planted to corn. A few scattering thistles will show themselves, which should be cut regularly once in ten days as long as one can be found. I have never known this course of treatment to fail in reclaiming the worst fields. The crops will more than pay expenses, and leave the field free for any future crop.

A FACT HUNTER.

ON THE BEST METHOD OF EXTERMINATING RED-ROOT.

Red-root is an annual plant, vegetating late the first season, and coming to maturity very early the next. It is a pest more especially to the wheat farm, and is of no injury comparatively to spring crops. It is a great exhauster to the soil on account of the oily nature of the seed. The plant is very hardy, and when it sprouts under unfavorable circumstances, does not perish like the seeds of some other noxious plants of the farm. It is the nature of the plant to throw out many branches which produce much seed, but when it is found in thick clover, as is sometimes the case, it is a single slender stock with only two or three seeds on the top.

The means for destroying this root are, pulling, plowing and burning. When red-root comes up thin and scattering in a crop of wheat, it can be weeded out by hand. The field should be passed over three times: first, early in the spring, before the wheat gets any growth, then again, twice when the plant is in blossom.

When red-root is very abundant, weeding by hand is not practicable, or, at least, not profitable. It is destroyed by plowing in the common course of spring cropping. The plants come up in the fall on corn and potato ground, and the next spring are turned under by the plow. A common summer fallow sown with spring wheat, or any other kind of spring grain, would be still more effectual, as the frequent stirring of the soil late in the season would cause more seed to grow, and consequently more would be destroyed. If no winter crop was raised, this culture alone would destroy it in the course of time; but on good wheat land it is desirable to raise winter wheat. With this crop grows the red-root.

To destroy it, weed a space five or six feet in width on every side of the field, and, after harvest, turn it over with the plow. Thresh the grain in the field, then draw and spread the straw as evenly as possible over the land; touch fire to it, and the red-root is destroyed, seed, root and branch.

The land then should be plowed and harrowed, and the next spring sown with some kind of grain and seeded with clover. Or, by the use of guano or any other kind of manure within the reach of the farmer which would keep up a supply of organic matter in the soil, wheat might be sown after wheat for an indefinite length of time. The main object of such a course of cropping would be the annihilation of red-root. Nor would that be its only advantage, as there are many other plants of great detriment to the wheat crop which would be destroyed at the same time; and, besides, on the ground of an abundant supply of food to the wheat plant, and on account of the frequent return of a crop, theory seems to indicate that it would be a profitable mode of culture. According to this plan, the oftener the farmer crops with wheat the sooner will he extirpate the red-root. By the common practice, every time a crop of wheat is raised the land is seeded anew, and the tendency is to perpetuate the growth of the plant on the farm.

Adams Basin, N. Y. JOSEPH ALLEN.

ON THE BEST METHOD OF MAKING HAY.

The art of making hay depends chiefly upon cutting at the right time. Clover should be cut when about half the heads are dead (colored brown) and the other half are still fresh and blooming. Timothy, when the heads are out in full blossom, and when the dust falls off the scythe strikes the stems. Hungarian grass, orchard grass, red-top and blue grass may also be cut when in full bloom. If this is done, then the first step essential to the making of good hay is taken. At the same time, if the weather should prove unfavorable, it will avail but little; hence the necessity of being guided by its appearances. It is not advisable to cut grass when the sky indicates falling weather, for if the hay becomes partially made, and then receives a wetting, it is sure to be injured materially. But grass will not injure in making if cut while the rain falls, or if it rains immediately after, provided that the weather continues fine after it has cleared off.

The grass when lying in the field should be *cured* and *dried*—not *roasted* or *bleached*. When the hay is left lying flat after the mower, it should be winrowed with hand-rakes, so that the air may play through it. It is essential to the making of hay that it be aired as well as sunned. At night the hay should be raked in rows with a horse-rake, and then put into cocks. To make a superior quality of hay it must be protected from the dew, which is effected by this process (cocking), and the hay-maker gains another important point, viz: that the hay continues to make while in the cock, there-

by losing no time. In the morning, spread the cocks in such a manner that the hay will be convenient for "getting in," preparatory to carrying, and in the afternoon carry what was cut the morning of the previous day, if it has been good hay-making weather. Clover may be excepted, if it is heavy, but generally the above rule will do. Here it is well to mention that Hungarian grass, unlike timothy and the other grasses, being more succulent, needs at least from two to two and a half days to cure it, especially where it is heavy.

Mow the hay in an open barn, where the air has free circulation. Salt each load twice—the cattle will like it all the better.

The great secret, then, in making hay, is to cure it just sufficiently to mow, when the blade is succulent and the stem retains its sugar. Upon these properties the fattening of the animals depend. And in no case should the old but erroneous custom of cutting hay for the virtue of the *seed* be followed, as is, in some place, almost an universal rule, especially with timothy. If the seed is desired, the hay must be sacrificed. It is then worth but little more than straw; but when you wish to cut it *as hay*, the seed should be the secondary consideration. At last, in the winter when the mows are opened, if the hay turns out of a bright, light green color, fragrant to the smell, and the cattle eat it with avidity, it is proof sufficient that the "best method of making hay" has been followed.

Harrison, Ohio. HENRY BOWLES.

ON CHEESE-MAKING.

In competing for the prize offered in the November number of the *Genesee Farmer*, for the best method of making cheese, I send the following, which I consider unequalled:

First. Save your own rennets, from veal, or those calves which have had nothing but milk. Immediately after taking out the stomach fill it with clean, coarse salt, mix it thoroughly with the liquid, which should be allowed to remain in, tie a cord around each extremity, and hang it up in a cool, dry place to cure. When needed for use, place them in a stone jar. For each rennet add one gallon of soft water, cover, and set them in a cool place. Let them stand twenty-four hours, then drain off the liquor into another vessel and add as much more. Let this stand forty-eight hours, when it may be drained off into the first liquor. As much more should again be added, which will need to stand till the first is used up, when it will generally be as strong as that. It should be kept covered to secure it from flies.

Second. A thermometer is always necessary to regulate the temperature of the milk. Set the milk at night in a shallow tub, and reduce the temperature as low as possible without freezing. This can be done by means of ice placed in tin cans and set into the milk. This will keep the milk sweet, and prevent the cream from rising. If any should rise, it should be dipped off in the morning, and warmed over a slow fire, taking care not to scorch it. When it is sufficiently warm, return it, together with the morning's milk. The temperature should now be above zero.* To every six gallons of milk add one pint of rennet. Let it stand forty minutes, then, with a thin knife, cut one way seven-eighths of an inch apart; let it stand fifteen minutes, and cut it the other way the same distance apart; let it stand fifteen minutes more, then, by means of a knife fixed on a screw, it should be cut into square pieces. It must be constantly, but carefully, stirred to prevent its congealing. The temperature can now be gradually and slowly raised, stirring it all the time, and keeping, if possible, every piece separate. When the mercury rises to 110° it is hot enough. Now commence to lower it by dipping off the warm whey and throwing on cold water, until it descends to 110°. To every fifty lbs. of curd, add six ounces of fine dairy salt, and it is ready for the press.

In all cases where the profit would warrant the expense, we should have suitable utensils to carry on our business. Indeed, we can not expect order, neatness, or economy, or even a good degree of prosperity, without them. And this is especially true in regard to making cheese, and no dairy of fifty, or even twenty cows can afford to be without them. The miserable practice, which many of our dairymen are addicted to, of making cheese in a washtub, pressing it in the half-bushel measure under the corner of the fence, and, when it comes from the press, greasing it with spoiled or dirty lard, then stowing it in some out of the way place where rats, mice, flies, and all manner of vermin can have free access to it, is nothing more nor less than a silly farce, and the product of such practice, I make bold to say, is not, literally speaking, cheese. It is, to be sure, cheese, in the common acceptation of the term; but it is not what cheese ought to be, nor what it would be, if the manufacturers would adopt suitable rules, and provide the necessary apparatus for making it; thus raising it from the place it now generally occupies, as a part of the kitchen drudgery, to the dignity of a particular science and a pleasant and profitable employment.

I have made cheese from the milk of ninety cows for three years, and have never lost a single cheese in all that time; and moreover, I know just how each cheese in my dairy-house tastes, looks and smells inside before I cut it, because they are all made just alike and receive the same care afterward; therefore they must be all alike. To all who feel disposed to doubt this assertion, I only ask that they will try it themselves.

Let me give you a description of my dairy-house. In one corner is an arch with a large iron kettle set in it, and inside this iron kettle is a tin one. In the iron kettle I put enough water to come up around the sides of the tin vessel in which I warm milk and whey, and, with a brisk fire under the arch, it will warm very quickly without the possibility of scorching. In the centre of the room is a large, shallow tub, set up about eight inches from the floor on an arch, with a moveable leg on the front and back sides, so that it may be tipped either way as occasion requires. On the front side of the tub, down close to the bottom, is an inch and a quarter hole with a cork to fit it. On each side of this hole is a small cleat, and a tin strainer fits into them, which is put in when we draw off the whey. For cutting the curd, I have six large, thin knives fixed on a handle, just seven-eighths of an inch apart. For cutting it into square pieces, I have

*We do not understand this remark. The temperature of the milk when the rennet is added is usually from 80° to 85°.—Com.

a thin knife fixed on a screw with seven-eighths of an inch thread. A small beam crosses the top of the tub, and through the centre of this beam runs the screw in a perpendicular position. At the top of the screw is a crank or handle by which it can be turned down through the beam, when it can be taken out, and the curd will be in small pieces just seven-eighths of an inch square.

For pressing, I prefer the patent self-pressers. The cheese should remain in the press thirty hours at least. After taking them from the press, I grease them over with clean, sweet butter, put a cap on them and grease them again. Every morning I wash them off with boiling hot whey, let them stand until dry, and then grease them again, always using good, sweet butter for grease. Rank butter or lard will draw flies. Everything about cheese should be kept scrupulously clean and sweet. It is almost impossible to keep flies away from cheese, but a great deal can be avoided by neatness, and if they should deposit their larva on the cheese, the boiling hot whey will effectually kill them. The room should be kept tight and well aired.

I find it more convenient to have the cheeses on long tables than on shelves. I can then go all around them without having to lift them down off the shelves. Everything used in making cheese should be thoroughly washed every morning, especially the presses, tubs, milk-pails and strainers.

Ackanuny, Morris Co., N. J. T. G. L.

ON BUTTER MAKING.

The art of making butter has not undergone much investigation until quite recently, when it was found that butter, by judicious management, was capable of being preserved for almost any length of time, and retain its flavor. To obtain this is one great object, for it must be good butter or it will not keep. Many and various are the ways of management, each one thinking, no doubt, his own way the best. But if we wish to improve we must be willing to bring our deeds to the light; we must investigate, compare, try our own experience, as well as other peoples', when it looks reasonable, and adapt ourselves and our business to the situation in which we may be placed. But besides all this, there are general rules that are always right, that can never err, in butter making, as in everything else.

The first of these rules is, *cleanliness*, scalding with boiling water everything which comes in contact with the milk or butter. Second,—we must not be listless or unobserving, but manifest our energy and perseverence, by always skimming the milk in due season; that is before loppered, and most especially before curds and whey form, or before the cream is rancid. The first of these is very apt to occur in very warm weather; the last will be very likely to occur when the weather is cool, and it is left too long before being skimmed.

Tins are by far the most desirable vessels to set milk in, and a tin cream tub, that can be put on the cellar bottom or in a tub of cold water when churning, or hot, as the case may require, with impunity, is by far the best. The lid should fit perfectly, so as to exclude the air while the cream is being collected.

We all know the tendency of cream and butter to imbibe the taste of whatever is placed near it, therefore it should not be placed in a pantry where are food or victuals of any kind; neither should it be placed in a cellar where are musty casks, soap, meat or vegetables, or any thing that emits an unpleasant odor. Cool and dry, with a little air and some light, though I should not have too much of that, is the best place for it.

Much has been said of the various kinds of churns, and apparently we have had all kinds, from the Arabian goat skin to those that glory in more scientific skill, like such as I saw in the Crystal Palace some years since, that wound up much like a clock and churned themselves; and, by the by, I thought they might be made to answer, as they were precisely the dash churn, but I have never seen any since, and therefore use the up and down churn, believing the motion thus being made is more healthy for the chest, the butter is better, and has this to recommend it, it is easily thoroughly cleaned and scalded. Cold water may be used a little in warm weather when butter is near coming, but it is more desirable to set the churn in cold water when we commence to churn, as I believe either hot or cold water is injurious to cream.

With a tin cream tub, we can easily get the cream to the temperature desired, even without a thermometer. Place your finger in contact with the cream; if it is pleasantly cool it is in a right state. When the butter is taken from the churn and placed in the vessel to receive it, wash out the buttermilk, in two or three waters as the case may require, then salt with Liverpool salt, 1 oz. to 1 lb. of butter, work it in well, let it stand 24 hours, when it should be thoroughly worked with a ladle until the brine or buttermilk is entirely out; but care should be taken not to work until greasy, nor should it be worked in too much haste, lest we lose its delightful properties, and have almost our cream back again.

We should have an eye to its not standing too long, after being skimmed, before it is churned; yet it is desirable to have the cream thick, because it not only makes more butter, but full as good. In consideration of all the care required we do not hesitate to say a person must be "a Wide-Awake" to make good butter. M. S. B.

Aurora, Cayuga Co., N. Y.

THE STUDY OF ENTOMOLOGY.

"Upon the importance and usefulness of the study of Entomology, or insect life, to farmers and farmers' children, with concise and practical directions for collecting and preserving specimens, cheap cabinet, etc."

Insects are the farmer's natural and hereditary enemies. In the prosecution of his profession he is annoyed and beset by myriads of insects of diversified forms and varieties, which devour his substance, rob him of his possessions, and, in many cases, drive him vanquished from the field. He can only expect to cope successfully with such assailants by being fully acquainted with their weapons, mode and time of attack, etc.; and this can be accomplished only by close observation and study of their habits and lives.

Entomology is the science that treats of insects. Every farmer is necessarily, to some extent, a practical entomologist: from being daily brought in

contact and opposed to them under various forms, he is obliged to devise ways and means to best prevent or counteract their influence. The depredations committed annually by either the midge, locust, or borer, are sufficient evidence of the importance of a study which has for its principal object the attainment of knowledge which shall assist in preventing its ravages.

As the limits of this article will not admit of extended remarks upon the importance of the subject, I will proceed to give some plain and practical directions for preserving specimens of insects for ornament or study, with directions for making cheap cabinet, instruments, etc., which shall be as simple and free from scientific terms and names as practicable, and by following which any farmer's boy or girl may, in a couple of seasons, secure a valuable collection of the native insects, become interested in the subject, and thereby be incited to study the science. A simple outline of the principles of the science will be necessary to a better understanding of the subject.

Entomology is that department of Natural History which treats of insects. Insects are animals without backbone, and are therefore termed invertebrates. They attain their perfect or adult state by a series of changes, termed metamorphoses, to wit: first, the *Egg;* second, the *Larva;* third, the *Pupa;* and fourth, *Imago*, or perfect insect, which is the winged state. The primary divisions of insects are termed orders, which are divided into sections, which are divided into families, thence into genera, and the genera into species or individuals. The different parts of the body of a perfect insect are, the antennæ or feelers, the head, the thorax, to which are fastened the legs and wings, and the abdomen. The following are the principal orders, accompanied by the name of a well known insect of each order, for reference and comparison:

Lepidoptera—example, butterflies and moths.
Coleoptera—example, beetles.
Hemiptera—example, bugs, tree lice.
Orshoptera—example, grasshoppers, crickets, and locusts.
Hymenoptera—example, bees, flies, wasps.
Neuroptera—example, dragon-flies.
Diptera—example, mosquitoes, midge.

Cabinet, etc.—The cabinet will of course depend upon the taste and ability of the collector, in regard to size, cost, etc. But one thing is necessary under all circumstances, and that is to have it as tight as possible, to prevent the entrance of insects which will destroy the collection. The following is a plan of a cabinet which I have found to answer a good purpose, being easily constructed, cheap and efficient. It is made of two-inch pine plank, measuring upon the inside, 28 by 15 inches, and 2½ inches deep, with a tight bottom made of soft pine board, and the whole inside covered with strong white paper, pasted on. The upper inside edge of the frame is grooved ¼ inch deep to let in the frames of glass doors, fastened to the outside by hinges. The main portion of the case is 20 by 15 inches, having two doors closing at the centre. The remaining portion, which is separated from the first by a partition, has a door, and is divided into two parts, the lower to hold the setting board, and the upper filled with shelves for containing the necessary implements, vials of specimens, etc. A piece of camphor should always be kept in the case. Such a case is suitable for every day use. Those for containing permanent collections may be made with glass fronts and moveable bottoms.

Collecting.—The farmer needs no special rules upon this point, as there is scarcely a day passes during their season but he can capture one or more specimens while pursuing and without interfering with his labors. Before going into the field he should put a couple of pill boxes into his pocket in which to imprison the insect he may wish to keep, until he returns home, where he can have it mounted. A piece of paper or a handkerchief will often answer the purpose. *Coleopterous* insects are met with during planting and sowing, in the fields and in the muck hole. *Lepidopterous* insects are found in the garden, among the flowers, and all kinds, in the orchard, wood-yard, etc.

Implements, etc.—The necessary implements will be, a setting-board, pincers, two setting-needles, the common brass pins of various sizes, small vial of chloroform, some gum Arabic, and a small awl. The setting-board must be made of soft pine or basswood, and pierced with holes of various depths. The needles should be fastened to the side of the board when not in use. They may be made of slender darning-needles, furnished with wooden handles. The awl is for piercing holes in the case and board. The chloroform is for killing the insects. A few drops should always be put upon butterflies and moths to prevent their breaking their wings by fluttering. The gum is for mending broken limbs and setting small insects.

Mounting, etc.—It is only those insects of half an inch in length, and upward, that are pinned. The process is simply to force a pin of the desired size through the thorax or between the wings of the insect. Stick the pin into the setting-board, arrange the wings and legs as you wish them to remain, and leave them to become rigid—a day or so; then remove to its permanent place. All insects are pinned in this manner, except beetles, which are to be pinned through the right wing cover. The limbs should be set in the attitude of life. If more than one specimen of the same insect, they should be arranged in different forms—as when at rest and when in motion. Pins and wooden braces may be used to keep the limbs in the proper position upon the board until rigid. The pins used to pass through the body should be proportioned to the size of the specimen. They should project far enough to hold them to the setting-board and case, and still be long enough to grasp easily between the thumb and forefinger. A little experience in this matter will enable any one to understand the method. Insects too small to be pinned may be fastened to slips of cardboard with a solution of gum Arabic, and the card pinned in the case. These remarks refer to the perfect insects, as these are in most cases the only ones preserved. To preserve larva and pupa, they should be placed in bottles or vials filled with alcohol.

Process of Setting.—*Lepidopterous* insects, as butterflies, should be held with the forefinger of the left hand beneath the body, and the thumb on the top, and a couple of drops of chloroform applied to the head will put it to sleep. Care should be taken when handling insects of this order, to pre-

vent injuring their wings and covering of the body, which are very fragile. After putting it to sleep, force a pin of the proper length through the body between the wings, and fasten to the setting-board. Then, with the setting-needle, place the antennæ or feelers in the position you wish them to remain, and brace them with pins; draw out the tongue or bill to about half its length and fasten it with a pin. Bring the line of the outer wings at right angles with the body, and fasten with braces and pins. Arrange the forward pair of legs, put another drop of chloroform upon the head and leave till dry. The antennæ are very easily broken after drying. To guard against this in some degree, when very long, they should be turned backward over the body of the insect.

In *coleopterous* insects, the pin should be forced through the right wing cover, and so through the abdomen. But if it is represented in motion, the wing covers and wings must be drawn apart and fastened as above stated, and the pin thrust through the abdomen near the thorax.

In *hymenopterous* insects, the abdomen and tongue should be drawn out and fastened with pins, care being taken to avoid the weapon with which many insects of this order are provided.

The foregoing rules apply to the insects of the remaining orders, with variations in each case.

Although these few remarks are merely introductory to the practice of this great science of "insect life," yet it is to be hoped many a young farmer will be induced to enter upon the study of practical entomology, which is one of the most interesting and instructive departments of natural history; to him of the most importance, and which, once entered upon, will never fail of interesting—a science so replete with subjects that the study of a lifetime might fail to exhaust them.

Belfast, Maine. GEO. E. BRACKETT.

ON THE CULTIVATION OF THE PEACH.

The peach is such a delicious fruit and it is becoming so scarce in this part of the country that some effort should be made to raise it.

The pits from natural fruit are the best to plant. They should be placed in a hole in the ground, in the fall, with a little straw thrown over them to prevent their being too muddy in the spring, and covered about three or four inches deep with earth, in order to prevent their drying out, and still allowing them to freeze. If the pits are left on top of the ground through the winter, the winds will dry them so that they will not sprout, and if they do not freeze the shells will not crack open, and they will have to be cracked, and will not sprout so early. In the spring, when the ground is ready, we dig up the pits and nearly all will be found open, but those that are not will have to be cracked. They should then be planted in nursery rows, in rich ground, about eighteen inches apart and six inches apart in the rows.

If they grow well they will be large enough to bud by the first of the next September. In the spring following, if the buds have taken and are growing well, the top of the natural tree should be cut off just above where the bud starts out, and the young trees should then be transplanted into rows about three feet apart and a foot apart in the rows, and the ground between them frequently stirred and kept free from weeds. The trees will be ready to transplant into the orchard the next fall or spring. As a general thing, unless a person wishes to raise a very large number of trees, it will be the most convenient to purchase the trees ready to set out, as it takes a great deal of trouble to raise them.

The land for the orchard should be thoroughly mellowed, and underdrained if necessary, and the holes dug by line, a rod apart each way. Be sure and have the holes large enough so as to give a chance for spreading out the roots to their full extent without crowding. They should be well set and staked, to keep the wind from blowing them over before they get well rooted. The first and second seasons the land may be planted with corn, or some hoed crop. I prefer corn to any other crop, as it is not so liable to disturb the roots of the trees as potatoes or other root crops. Still, root crops may be put in, by taking care not to put them too close to the trees. After the second season the trees should have the whole ground, and it should be kept worked every year, so as to keep it free from weeds, and manure applied.

The trees should be trimmed enough to keep them in good shape, with no scraggly branches. Many think that trimming ruins peach trees, but it is a mistaken notion, for I have seen several peach orchards that had been given up as good for nothing, taken hold of by a man who went into them and trimmed away more than half of their tops, and the trees began to bear immediately and continued to bear for some years after. The use of lime as a manure should be avoided in the peach orchard, as I have known of several orchards that have been ruined by the use of lime. Rye is also injurious to peach trees. MYRON E. TANNER.

Haverstraw, N. Y.,

IS IT BEST TO PLANT FRUIT TREES IN THE SPRING OR FALL IN THIS COUNTRY?

Probably I am not as well qualified as some others to answer the question. I have had some experience in transplanting fruit trees, and am satisfied that, as a general rule, all things considered, it is best to set them in the fall, for the following, among other reasons:

The winter is the season of rest for trees; by setting in the fall the growth is not checked as it is if the yearly growth has commenced, as it does very early in the spring, as soon in fact as the frost is out of the ground. Farmers generally have more leisure to set them properly in the fall than they have in the spring, when they are about commencing the summer campaign of farming.

There are other things, however, to be considered, both for and against. On clay or loomy soils the ground is more liable to heave by freezing and thawing, (thereby endangering the throwing out of the trees,) than on sandy or gravelly soils, although the latter freezes much the deepest. For that reason it may be better to set trees in the spring on clay or loam soils. If set in the fall, each tree should, immediately after setting, have a liberal supply of mulching, such as rotten chips from the wood yard, or rotton wood or leaves from the forest, and should be well staked to keep them in place.

After all, there is more in the manner than there

is in the time of setting trees. I have set trees in the fall, winter, spring and, in fact, in mid-summer, and have never lost one in a hundred. I have now apple and plum trees that I set in February (the ground being bare of snow and thawed up) that are growing and producing fruit well. Several years ago I was sprouting some apple trees; in July several sprouts came off with roots sufficient to grow if it was the right time of year. (It was the 7th day of July.) I thought that I would experiment with them. I selected nine, trimmed them properly, picked off every leaf, set them out, gave each tree a pail of water, and in a few days another. The result was, every tree lived, and hardly knew that they had been transplanted at all, and are now good bearing trees.

Many farmers are so careless in setting trees that the poor things are not to blame for not living. They dig a small, deep hole, likely enough in sod ground, jam in the roots of the tree, fill up with stones, sods, or any thing that comes handy, stamp down the filling a little, turn in their cattle and sheep, and leave them to their fate. After a while they expect to gather fruit from trees so set out. Is it a wonder that they are disappointed and blame the nurseryman for not furnishing good trees? When I set trees, I dig a broad, shallow hole, just deep enough so that the tree shall stand a trifle deeper than it did in the nursery. I keep the top soil (or about one half the depth of the hole) by itself, and put that in first, next to the roots; I then churn the tree up and down a little, in order to work this soil in among the roots, then finish filling up with the soil last taken from the hole, and press all down firmly. If the weather is dry I give each tree a liberal watering. In this way I rarely lose a tree. WM. HOWE.

North Almond, N. Y.

ON THE CULTIVATION OF CELERY AND PRESERVING IT FOR WINTER USE.

What a vast difference cultivation makes in a plant. Celery in its wild state is the common Smellage, a plant vastly different from the celery as now raised for the table. I experimented several years on raising celery, without success, until I adopted the plan which I here propose to describe, since which time I have succeeded wonderfully.

You may either sow the seed in a rich bed, prepared for it in the open ground, as for cabbage seed, or in a hot-bed. If in the open ground it is a good plan to cover the bed with an old piece of matting, to keep down the weeds. I prefer to raise the plants in a hot-bet, although some consider them more liable to run to seed than when started in the open ground, but I have never been troubled with their running to seed, nor have any of those who obtained their supplies of plants from me.

I made a very simple, cheap hot-bed cover this year, by stretching a piece of muslin on a frame just the size of the top of my hot-bed frame, and coating it with linseed oil, this I used instead of a sash. I think it answers as good a purpose as glass for celery, and many other things, but it takes a little longer to heat up the bed.

The seed for the general crop should be sown about the last week in March, or the first of April. Some persons sow broadcast, but I prefer sowing in drills, as I consider it much more convenient, and the plants grow stouter if in drills half an inch deep and six inches apart. Every ounce of good seed thus sown will produce 10,000 or more strong plants. The plants from the early sowings should be pricked out as soon as they are two or three inches high into cool, rich nursery beds, there to stand for a month before setting out into the trenches.

The trenches require rich ground in an open exposure. Some prefer transplanting into level ground, but I prefer deep trenches, both on account of the shade and of the convenience of earthing up. I dig my trenches eighteen inches deep and twelve or fourteen wide, and then fork up one spade deep in the bottom of the trench and work in the manure. Hog manure is the best. I put about a wheelbarrow load to twelve plants this year, and had the nicest celery I ever saw. The plants should be set five or six inches apart. Dig the trenches by line and about three feet apart, put in the bottom at least three inches in depth of thoroughly rotted manure, then pare down the sides and thoroughly incorporate the parings with the manure, then set out the plants

The plants for the general crop may be set right from the seed bed into the trenches, and set in the same way, except that the trenches should be four or five feet apart, and the plants an inch or two farther apart in the trenches. Trim the plants before setting out, by cutting off the loose, straggling leaves and the ends of the roots; set the plants out with a dibble; water them thoroughly, and shade them till the roots are started. The plants should be hoed occasionally till they are large enough to begin to earth up, which will be about the 1st of September.

The earthing should not be done all at once, but gradually, once in two weeks, till time for harvesting them. Earthing may be readily done by placing boards in the trench to hold up the leaves while the earth is being shoveled in from the space between the trenches; the boards to be removed as the work progresses, and great care must be taken to prevent the earth from getting between the leaves or on the crowns of the plants. The hoeing and earthing must not be done in damp or wet weather, as that will cause the celery to rot. When the plants are about two feet high and well bleached they are fit for the table.

In the month of November, [the time will vary according to the latitude,] before the ground freezes solid, dig your celery and set it up against a bank of earth, close together, then cover it with straw and set up another row and so on till you have it all set up; but make your bank long enough so that you will not have more than four or five rows, then cover it with some loose litter and put on some earth; cover it lightly, leaving ventilating holes open as long as it will do on account of freezing, then close them. When you wish the celery to use, open the bank at one end and take out what you wish, covering up the rest.

Haverstraw, N. Y. MYRON E. TANNER.

ON THE BEST METHOD OF DRYING FRUIT.

During the fruit drying season farmers' wives have to labor hard for the sake of laying up a store of good things for winter, and most of them will

appreciate that method which is the best, with the least amount of labor. We have tried various ways, and those which we think best we will give.

Apple Drying.—Apples can be pared, quartered and cored with machinery. They should then be strung, and hung on apple racks. They must then be kept in a warm place until dried. By slicing them and drying on plates they can be made more like fresh apples, but there is not difference enough to compensate for the hard labor.

To Dry Tomatoes.—Slice them without peeling them; to every pound of fruit add one-half of a pound of sugar; boil them in the syrup, then skim them out and lay them on plates to dry in a warm oven. They will then be nearly as nice as imported figs.

In drying cherries, the pits should be taken out, and they should be dried slowly. They are full as nice prepared without sugar. Currants should be freed from the stems and dried as you do cherries. Blackberries are much nicer prepared with sugar, and do not need to be dried very hard.

Raspberries and Whortleberries need no sugar, and we find them excellent for puddings.

We ought to have mentioned in connection with apples, that very tart apples are the best for common use. Dried sweet apples are very good stewed and mixed with pie plant, and make an economical pie. They also make excellent preserves, prepared in the following way:—Soak them a few hours in warm water; to every pound of fruit take a pound of sugar, and cook them. When about half done, add a lemon, sliced thin. When the apples are done, skim them out, and boil the syrup down until clear, then pour it over the apples, and I think you will be satisfied with your preserves.

Armada, Michigan. MRS. A. J. SIBLEY.

ARE SEWING MACHINES OF MUCH USE IN FARMERS' FAMILIES!

Where *can* sewing machines be *more* useful than in the farmer's family? It would be impossible to enumerate the manifold duties daily devolving upon the farmer's wife and daughters. They know by stern experience what they are, and "outsiders" would not be interested in the recital; but if ever the old proverb, that "woman's work is *never* done," is verified, it is in this case. From early dawn until noon, at all events, the weary feet are in constant requisition. After dinner, the farmer smokes his pipe comfortably and cosily in his favorite arm-chair before returning to his work, but the wife has no time to smoke, even if she wishes it. Perhaps, by the middle of the afternoon, if it is not in the "busy season," she is ready to sit down to the huge basket of sewing that looms up so fearfully. Two hours hard work makes no visible diminution of the pile, but it is "tea-kettle time," and the sewing must be put aside. There may be a short time in the evening, when the day's tasks are over, that the tired fingers, stiff and sore with toil, may again ply the needle, but it is at too great an expenditure of nerves and eyesight to be profitable; and, worried and discouraged, she exclaims, "I never can get time to do any sewing."

What wonder is it that so many of our wives and mothers wear out prematurely, when the burden of care is never lifted, when mind and body are always overtasked! This ought not so to be. It need not, now there is a remedy. The intelligent, wide-awake farmer procures every implement which will lighten his labor, thinking that "time saved is money earned." Why not do the same for the care-worn wife? By her prudence, economy, and incessant, willing labors, she has greatly assisted in procuring that beautiful farm. Half the present prosperity is owing to her efforts, and it surely is her *right* to enjoy some of the benefits accruing from it.

It is this incessant but ever-necessary slaving at the needle that wears out our American women. The "lords of creation" say, "take exercise in the open air," and quote the English women to us—tell how *they* walk for miles, and don't sit and sew all day; and then, with "here's a coat that needs a little mending," walk off to talk to their friends about the crops, the weather, our next President, the tyranny of the slave-holders, etc.; little thinking that the wife at home is as great a slave to the small steel needle, and *that* a more merciless master than any case to be met with at the South. The "little mending" turns out to be a day's task. And so it goes. We know we "ought to walk, to take out-door exercise," but how *can* we, when that coat needs so many stitches.

The fall work is coming on before we are fairly ready for the summer, and the children must be clothed. We women often prove our own enemies. We think "we can work fast enough with our needles," or "never could learn to manage a sewing machine," so that the generous wish to lighten our labors is sometimes resisted, while we, unconscious, from having borne it so long that our burden is wearing out health and strength, hug our delusion.

But a brighter day is dawning for us all. The sewing machine will soon be as necessary a part of the household furniture as the churn and cooking stove. Our farmers will find, when this great burden of care is removed, when the pressure of that never-before-finished sewing is gone, that the "auld wife" will grow young again; once more she can find time for pleasant social intercourse, and that she will be more like the bride he first took to his heart and home than she has been for many long years. P.

WASHING MACHINES.

"What is the best washing machine? Do they save much labor, and is their introduction among farmers desirable?"

We will consider the merits of a few of the latest improved washing machines and then try to ascertain which is the best, and how much they reduce the labor of washing.

In the first place we will consider the one advertised as "Patent Improved Washing Machine." It consists of a washtub with ribs in the bottom, radiating from the center to the outside, and has a head ribbed in the same way on the under side, having a frame on top by which to turn it round. The clothes are placed between the two ribbed surfaces, with soap and water, and the head turned till they are supposed to be clean. These ribs are liable to tear the clothes.

"French's Conical Washing Machine" is on a similar principle with the last; that is, it washes the clothes by passing them between two sets of ribs. It is a conical tub, with ribs on the inside running down from the top, with the corners

rounded. On a vertical shaft through the centre of the tub is a frustrum of a cone, made of wood, and surrounded with ribs in the same way. By turning a crank the centre piece is made to revolve, and the clothes being placed between that and the outside are rubbed. This is not so liable to tear the clothes as the last. It is easily worked from the way the centre is hung and turned. If the ribs were like those of a washboard, so as to save the wear, this machine would be nearly perfect.

The "Metropolitan Machine" consists of a number of small pounders, secured by curled wire springs in a circular head, which itself is supported by a handle hung with a twisted cord from the tops of two hickory or oak sticks, and the bottoms attached to the bottom of the tub, which are drawn together when the pounder is pressed down and then fly back and raise it. Its advantages over the pounding barrel are simply these: greater ease in raising the pounder, and the springs on the small pounders render it less wearing to the clothes.

For practical purposes French's Conical Washing Machine is the best of these, although it might be improved by giving it a surface like a washboard instead of the ribs which are nailed in, which arrangement would be better for the clothes, although it would cost a little more.

If you attach a wringer, which consists of two rollers in a frame, one or both of India rubber, and turned by a crank, you can run the clothes through that and they will drop into the basket fit to iron. Where the washing is done by hand the washing day is a dreaded day, but with this machine and a wringer, much of the labor is obviated, less time occupied, and the muss is confined to a very small space. These machines not being expensive, their introduction among farmers is very desirable.

Haverstraw, N. Y. LOUISE.

SODA OR SALERATUS.

"On the use of soda or saleratus in cooking. Is it as injurious as is sometimes asserted?"

We do not deem the soda or saleratus used in cooking injurious, unless, like many other very good things, it is used to excess. On the contrary, as it is often used to make light cakes, dumplins, pot-pies, etc., it is far better than to eat them heavy. Nor do we deem this a case of two evils, to choose the least. We believe it is actually healthy. It corrects the acidity in the stomach, promotes digestion, and is the very best medicine in some diseases used by the apothecary.

We might learn wisdom here, as at many other times, by the instincts of the lower parts of creation. Fowls love to pick, and almost smother themselves in a cloud of dust, from an ash heap. Turkeys have been known to double their weight when they could pick up ashes, broken shells, charcoal, etc., to those which, under the same circumstances, were deprived of it.

We would never use it in bread, because nothing but pure yeast will make pure, wholesome, unadulterated leavened bread. The soda or saleratus entirely changes the chemical properties of yeast. We do not deem much warm cake and biscuit very healthy under any circumstances. But when they have to be made, be sure to used in them pure, unadulterated soda or saleratus, for they will carry oft times their cure with them. M. S. B.

Aurora, Cayuga Co., N. Y.

ON THE DUTY OF MAKING HOME ATTRACTIVE.

It matters not of what the human mind,
In all its parts so wonderful, be made.
There is a life within, a hidden life,
Requiring proper food as much as this
Frail tenement of clay, in which we now
Must battle with the toils and cares of life.
We all possess a monitor within
To guide us in the search of proper food
For this, our higher nature; but, alas!
How often Conscience thunders in our breast,
And we still stubbornly pursue the thing
It fain would check, till it no longer comes
With its reproof, but quietly withdraws,
Sits speechless, dumb, while we press madly on.

Most fearfully is this the case with those
Who yet are in their youth, and have not learned,
By long and careful watch, the many ways
In which their keen Arch-foe alluring smiles.
They seek to fill their minds with that which gives
Some never-failing pleasure to their lives.
All this is well; but, in the choice of it,
They make a sad mistake; for Fancy, with
Most artful smiles, hangs out her chart.
We see it hourly, in the lighted hall
Which blandly smiles: the theatre more bold,
And, worse than all, within those drunken dens,
Where men degrade themselves below the brutes.
All these dark pits and caverns deep which lie
Within this way to death, are covered o'er
With flowers, arranged and wrought in fairy forms
By magic art. But here, methinks, the rose
Blooms not without its ever-piercing thorn.
For this deceitful flame soon dies away,
And leaves an aching void within the heart;
A melancholy boding resting down
As 'twere some evil spirit's mighty power
Now gorging on our disappointed hopes.

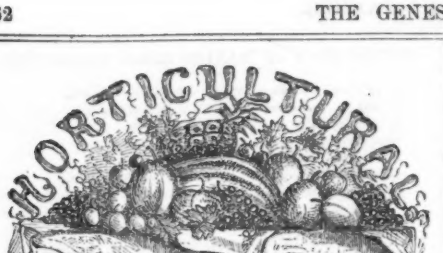
But all these longing thoughts of happiness
And social joy were never planted here,
Within the heart of man, to prove his curse;
For they are high and Heaven-born thoughts, and
Heaven has pointed out the proper food for them.
There is which satisfies and never pains,
But ceaseless and undying pleasure gives.
On this the mind of man may feed, as bees
Upon the nectar of the flowers regale.
Home pleasures give the best returns, for they
Are innocent and safe, refined and good.

Now Heaven ordains that on the parent falls
The proper moral training of the child;
And this, if done with care, restrains the lamb,
At least, from evils foreign to the fold.
The adage saith, that like doth like beget.
If this be true, then rude and barren walls
Of home beget rudeness of the mind.
A lawn of weeds and tangled thorns, with which
The eye is never pleased, begets not thrift;
And sour, unpleasant words, from those at home,
Are keenest poison in the youthful mind.
In fine, a house all unattractive, bare,
From cellar damp to garret smoked and gray,
Will never furnish food for growing minds.

How plain the duty, then, of every man
Who has in charge the training of a youth,
To make for him a home attractive, sweet;
Not one repelling into paths of sin.

Are you a tiller of the soil, for food?
And do you say you have not the wealth
To build or furnish homes, which by their charms
Shall keep your sons from error's ways? 'Tis well!
'Tis not required. But this you have; your power
May make your home a pleasant place, and this
Is more than wealth. I will not tell you what
Or how to do. A thousand ways spring up
At once within your mind. But try the thing,
And thus, perhaps, you'll "save a soul from death,
And hide a multitude of sins."

Romeo, Mich. W. H. SIBLEY.



FRUIT GROWERS' SOCIETY OF WESTERN N. Y.

THE Sixth Annual Meeting of the Western New York Fruit Growers' Society was held in this city January 9th and 10th.

The President of the Society, BENJ. HODGE, Esq., of Buffalo, was unable to attend, but sent the following communication, which was read by Secretary BISSELL,

Gentlemen of the Association: Deprived as I am, in consequence of continued ill health, of appearing before you in person, my only alternative seems to be to lay before you a brief communication.

The year 1860, just closed, has been a most fruitful one in Western New York; perhaps, on the whole, more propitious for fruit-growing generally than any other of many years previous. The severe cold weather of the 2d of February, which for a time seemed so disastrous—and indeed created great fears that the most of the peach crop was destroyed—at length proved to be much less damaging than was at first anticipated, generally resulting in merely partial failures; while most of the orchards in our peach-growing region produced a most bountiful crop. And when this large crop was coming to maturity, it seemed almost impossible that a market for our large surplus could be found. But the failure of the peach crop in New Jersey and Delaware opened a large field in supplying the cities and villages in the eastern part of the State. The Canada market also required large supplies; so, upon the whole, prices proved quite satisfactory to the peach grower.

The apple crop, also, for quantity and quality has never been surpassed. Immense quantities have been shipped to the East and West; and although prices perhaps have ruled somewhat lower than usual, yet the profits of fruit-growing have never been more fully established.

The pear crop, too, was very large and truly fine. Our markets were never before so well supplied. Prices in many places were very low; but fruit-growers who had in time made arrangements to forward their choice fruit to New York, Boston, Philadelphia, Chicago, etc., have had but little reason to complain of low prices.

In smaller fruits there has been great abundance.

In this department there has been, of late, a manifest improvement and an increased attention. The growing of the smaller fruits for market purposes has not only proved a profitable business, but has added largely to the comfort and to the health of our population. Improved modes of culture, based on careful observation and experience, have not only added much to the quantity, but also to the excellence of our choice fruits. In this direction, there is yet a large field before us for improvement. As an illustration of this, we may refer to the American Black Cap Raspberry. By a scientific mode of propagation, this fruit has not only been nearly doubled in size, but also in quantity and excellence. Propagating only from young and vigorous plants from year to year, and also the judicious system of pruning, has of late given this fruit a prominent position.

Until recently, comparatively but little attention has been paid to the general cultivation of the grape, and the opinion has pretty generally prevailed that varieties maturing as late as the Isabella and Catawba, could not be successfully grown except in a few favored localities.

Science and skill have, however, demonstrated the fact that by a good selection of soil and position, thorough drainage, judicious pruning and good culture, even these varieties can be successfully grown in most places in our fruit-growing region. I venture the opinion that the day is not far distant when Western New York will be as famous for grape-growing as it now is for other departments of fruit culture. The Hartford Prolific, the Concord, the Diana, and more particularly the Delaware, together with some other varieties, are rapidly growing in public favor.

In taking my official leave of the Society, over whose deliberations I have presided for two years, permit me to express my grateful thanks for the co-operation I have so uniformly received from our pomological friends. To Secretary BISSELL, in particular, am I under very great obligations for the prompt and efficient manner in which he has discharged the duties of his office, and thus lightened the labor of mine. Should a kind Providence again restore me to health and strength, I shall not fail to be in the midst of our pomological meetings. And be assured, that as long as life lasts I shall take a deep and lively interest in your proceedings. Your discussions and debates, as published from time to time in our Horticultural and Pomological journals, will not only continue of interest to me, but also to thousands of others. BENJ. HODGE,
President of the Fruit Growers' Society of Western New York.

BUFFALO, January 7, 1860.

REPORT OF COMMITTEE ON FOREIGN FRUITS.

The Standing Committee on Foreign Fruits, consisting of Messrs. GEO. ELLWANGER, T. C. MAXWELL, J. C. HANCHETT, C. M. HOOKER, and E. A. FROST, presented the following Report:

Your Committee on Foreign Fruits thought best to present a list of such varieties of foreign fruits as promise well, with such remarks as their experience would justify.

PEARS.

Passe Tardive—Size large; first quality. November and December.

Delices de Hardenpont—Size medium; first quality. November.

Countesse d'Alost—Size large; second quality; quite as good as L. B. de Jersey, and as handsome. October.

Beurre Mauxion—Size medium; second quality; will most likely prove first quality. October.

Brailmont—Size large; second quality. November.

Consiellier de la Cour—Medium to large; first quality. September

Pater Noster—Size very large; nearly as large as Van Mons Leon le Clerc; second quality; often of first. Middle to last of November. This pear can be recommended for extensive market cultivation.

Doyenne Defais—Size medium; quality very good. October and November.

Beurre Bachelier—Large; first quality. November and December.

Beurre Nantais—Large; first quality. October. Tree fine grower and good bearer.

Duc de Brabant—Large size; first quality. October and November.

Colmar Bonnet—Medium to large; quality good. Last of September.

Surpasse Colmar—Small; first quality. November and December. In excellence and keeping qualities one of the very best.

Duchesse de Berri d'Ete—Medium size; first quality. September.

Comte de Lamy—Large size; first quality. October.

Doyenne Downing—Medium size; good, melting, buttery and musky; resembles a White Doyenne. October.

Harry—Medium size; very juicy and sugary, and fine flavor.

Beurre Superfin—Large size, and in all respects of the first quality. October and November.

Beurre Hardy, or Beurre Sterkmans—Large size; best quality; of great beauty and excellence. October.

Nouveau Poiteau—Large size; first quality; tree erect and strong grower and good bearer. November.

Beurre Clairgeau—Large size, and in appearance has no superior; quality good; very early bearer. November.

The last four named varieties have been for several years extensively disseminated. They have proved the past season, as heretofore, in all respects of the first quality;

trees hardy and productive, Beurre Hardy, Superfin, and Nouveau Poiteau holding the foliage till late in autumn. Beurre Clairgeau will doubtless be one of the most valuable market pears, and cannot be too strongly recommended for that purpose.

PLUMS.

Prince of Wales—Color, reddish purple; size large; first quality. August and September. Very vigorous grower; adheres slightly to the stone.

Goliath—Large and handsome; skin violet purple; parts freely from stone; good quality Very fine grower. Last of August.

Diaper Rouge—Large size; skin violet red; first quality; free stone; slow grower. Very fine in all respects. Last of August.

Lawson's Golden Gage—Medium size; skin yellow, marbled with red; second quality; free stone; good grower. September.

Wangenheim—Medium size; best quality; skin purple; Resembles in shape and size the German Prune. This is a very superior variety. Last of August. Tree slow slower.

Black English Damson—Small; dark purple; best quality for preserving; very productive. September and October.

Ronald's Fancy—Large size; yellow; quality good, better than Imperial Gage. Free stone, and good grower.

Nelson's Victory—Medium size; yellow, marbled with red; second quality; good grower. September.

Sharp's Emperor—Large size; skin yellowish red. A very beautiful and good plum. Tree fine grower. September.

Victoria—Large size; good quality; skin violet red, covered with a purple bloom; free stone. A very beautiful and desirable variety. September.

CURRANTS.

The following can be relied upon as being the very best:

La Versaillaise—Nearly if not quite as large as Cherry, with longer bunches. Deep red; very productive.

Prince Albert—This is a very distinct variety, of large size, light red color, and very late. An immense bearer.

White Grape—This now well known variety is still unrivaled for the table and wine.

RASPBERRIES.

Belle de Palluau—A very fine large red variety, of rich flavor, and very productive.

Belle de Fontenay and Marvel of Four Seasons are the best of the autumn bearing varieties. With proper management, a good crop of fruits can be obtained in September and October. If the canes of the previous year are cut down to the ground and only three or four canes from each plant allowed to grow, and all suckers are kept down during the season, an extra fine autumn crop of superior size and flavor may be looked for.

STRAWBERRIES.

Triomphe de Gand—This is the finest foreign variety that has yet been tested, and there is no native variety that will compare with it in size, flavor and beauty. It is also very productive, and will doubtless prove one of the most profitable varieties for market culture.

Trollope's Victoria—This is also a valuable variety, large, high flavored, late, and productive. Well worthy of pretty general cultivation.

A Committee, consisting of Messrs. CHARLES DOWNING, P. BARRY, and S. B. GAVIT, was appointed to examine the fruit on exhibition. They made the following report:

REPORT OF COMMITTEE TO EXAMINE FRUITS.

Your Committee beg to express their pleasure at the fine display of winter fruits exhibited. To see and examine such a collection is a treat not often enjoyed.

PEARS.

ELLWANGER & BARRY exhibited 48 varieties of pears, among them the following valuable varieties, in good condition:—Jaminette, Easter Beurre, Josephine de Maline, Gros Colmar, Chaumontel, Bezy d'Esperin, Beurre de Beaumont, Vicar of Winkfield, Beurre Benoist, Reading, Prince's St. Germain, and Charles Smet. Cooking varieties—Catillac, Black Worcester, Tarquin, Pound, Leon le Clerc le Laval, and Chaptal.

E. SHARP & SON, of Lockport, presented seven varieties—Duchesse d'Angouleme, Swan's Orange, Beurre Diel, Bartlett, Louise Bonne de Jersey, Seckel, and White Doyenne. These pears were in a green state, the ripening at the usual season having been prevented by some preserving process not communicated.

CHARLES DOWNING, of Newburgh, displayed a fine collection of pears—Barry, Prevost, Willermoz, Colmar de Metz, Surpass Meuris, Ives' Winter, Bezy des Veterans, Leon le Clerc de Laval, St. German de Pepin, &c.

APPLES.

SMITH & HANCHETT, of Syracuse, exhibited nine varieties of apples, including fine specimens of Northern Spy, Vandervere, Wagener, and Baldwin.

Dr. P. B. BRISTOL, Dansville, a fine dish of Northern Spys.

W. T. & E. SMITH, Geneva, fine King, Melon, and Wagener apples.

JOHN WILLETTS, of Macedon, a dish of Monmouth Pippins.

A Fruit Dealer—A large dish of large, well-colored Northern Spys.

H. N. LANGWORTHY, Rochester, a fine dish of Pomme d'Or, and one of Yellow Bellflower. The Pomme d'Or is a russet, somewhat like Pomme Gris, and of finest quality

E. J. SPICER, Murray, seven varieties of apples, including fine samples of Spitzenburgh, Northern Spy, Swaar and Seek-no-further.

H. SPENCE, three varieties, including five specimens of King.

CHARLES DOWNING, fifty varieties of apples, including the following among other rare sorts—Progress, Winter Harvey, Nick-a-Jack from the South, Rockport Sweet, Male Carle, White Winter Pearmain and Phillips' Sweet.

ELLWANGER & BARRY, fifty-four varieties, including fine specimens of Blue Pearmain, Ladies' Sweet, Yellow Bellflower, Wagener, Spitzenburgh, Swaar, Monmouth Pippin, Canada Renette, Pryor's Red, King, Herefordshire Pearmain, Twenty Ounce, Northern Spy, Belmont, and White Seek-no-Further.

GRAPES.

Dr. P. G. TOBEY, of Rochester, exhibited well kept Diana, Isabella, Clinton, and Catawba grapes.

BISSELL & SALTER, of Rochester, nice Diana grapes.

MATTHEW G. WARNER, of Rochester, presented Catawba, and a seedling, a white variety of good quality, promising to be valuable.

SUBJECTS FOR DISCUSSION.

A Committee was appointed to name subjects for discussion at the present meeting, and reported as follows:

I. The best method of gathering, packing, and transporting pears to market.

II. The best method of preserving fruits, so as in every way to prolong the period of consumption.

III. Can the yellows in the peach be introduced by the importation of trees from infected districts?

IV. Which is the best stock for the cherry, for general purposes, the Mazzard or the Mahaleb?

V. The Northern Spy apple; what is the value of it as an orchard fruit?

VI. Is it advisable to plant, in Western New York, the White Doyenne pear for orchard purposes, in view of its present liability to crack and spot in certain localities?

VII. What is to be understood by the term a standard, and what by the term a dwarf, tree?

VIII. What influence has the stock upon the graft in modifying or changing the quality of the fruit?

IX. In transplanting trees, is pruning the tops and roots of importance, and if so, under what circumstances?

SUBJECT I.

The best method of gathering, packing and transporting pears to market.

Dr. SPENCE, of Yates Co., thought it was the best way simply to barrel them in common flour barrels. When pretty full, shake the barrel gently, and frequently shake gently as you fill, so that the pears match one with another and the whole get pretty well consolidated. When

full, use pressure in putting down the head. It is necessary to use care in gathering, so as not to bruise in picking, and the barrels should be packed in the orchard and near the trees. In transporting to the railway or to market, all jarring should be avoided. There is no secret as to keeping pears, other than keeping them in a cool room. Pears, and grapes too, would perhaps keep better by drying them awhile in a well ventilated room before putting into a tight vessel; but there is no difficulty in keeping even our Bartlett pears.

Dr. SYLVESTER, of Wayne Co., said, first have them fully matured and gather before the time of severe frost. Handle carefully, and place in a dry room. They are allowed to sweat for a week or more, and then should again be carefully selected over, assorted, and packed in half-barrels made for the purpose. It is better to arrange them carefully in packing, and to shake down often; put a few at a time into the half-barrel, jar gently and then add. Pack your half-barrels full, and keep until such a time that they shall be very near the point of ripeness before sending to market. They should be in such a condition that by a week's ripening in the city, they are ready for market. In assorting pears, it is best to make about three classes of the fruit, viz: best, medium, and poorer. By this method, the first and second classes will bring as much or more than the whole of the fruit would have done if packed promiscuously.

L. B. LANGWORTHY, of Monroe Co., thought that Osband's Summer pear needed picking as soon as the seeds colored, and that this was the test of the fitness of most pears for gathering.

Some members coincided, while W. B. SMITH and CHAS. DOWNING, of Newburgh, differed. Mr. DOWNING mentioned varieties which did not blacken their seeds.

P. BARRY, of Monroe Co., said summer pears are generally gathered while the seeds are quite soft and green, and in a great many pears which are well ripened in the house, the seeds were found not colored at all when the fruit was eaten. In summer pears, the seeds are no criterion from which to judge. Winter pears should be left upon a tree as long as it retains its foliage, but after the leaves fall the fruit deteriorates in quality. The time for gathering the winter pears is, in Rochester, about the middle of October of each year—say from the 15th to the 20th. Pears should always be gathered very carefully by hand, and it is often not best to pick all the fruit from the same tree at the same time. They should be immediately assorted and the poorer qualities separated from the best. Then put carefully into boxes, which should stand in a cool, airy place in the north part of the building, and be kept as cool as they can be kept at that season of the year. When frost comes, put them into some place like a barn floor, where you can cover them with leaves until the more severe weather comes, at which time they should be put into the cellar of some building in which there is no fire. The great point or object is to keep them as cool and dry as you possibly can and yet not let them freeze. Care in assorting is of great consequence, as in the market value as well as in the keeping a great deal depends upon the manner of assorting the fruit.

As to the time of sending to market, opinions differ. For the present, pears must be marketed in the fall, and as soon as plenty of good pears are raised there will be plenty of fruiterers to buy them; fruiterers who will know how to keep them into winter, and how to ripen up and mature them as the market needs the supply.

As to the need of a warm room to ripen them up, if good specimens are well matured upon the tree, they will ripen up perfectly well in a cool cellar, and can be brought from the cellar in a splendid condition for the table.

The gathering and packing of autumn pears is a very important matter; for, from some cause, many have perished on the way to market. Gather early and assort carefully, because none but good, hard, clean-skinned pears ought to be boxed. Poor pears infect others. When packed, send to market by the quickest conveyance. Either peach baskets or small boxes are better than barrels, because in barrels they are very apt to heat, sweat, ferment and decay. There is also a kind of fungus or black spot on some fruit, which should especially be thrown out, for it is contagious. It spreads more rapidly when the barrel is warm and communicates a bitter taste over all the fruits in the same package

H. E. HOOKER, of Monroe Co., thinks good, sound half-barrels with holes bored at the ends are none too large to ship pears in. ' Agreed with Mr. BARRY about picking and keeping cool, but did not cover with leaves on the barn floor; it was for too short a time. Last fall he put the Glout Morceau into barrels, and, after sweating for a week, at once into a cool cellar, and is using them now in fine order. Don't think there is any more trouble in ripening winter pears than winter apples. Pears should be sent to New York in the fall when they are hard, and in the very same manner as winter apples. It is important that they should not be heated nor the sun shine upon them when first gathered. Great care should be taken, when first picked, to keep them just as cold as you can. As to putting at once into the cellar, would not put the pears into any cellar when first picked. Every apple and pear should be kept in a cool, dry, airy place above ground until very cold weather. It is a capital plan to place in heaps, if it can be done without injury to the fruit; for it is a great object to have a good deal of fruit together. The pears thus retain the fine aroma and the real excellence of the fruit.

L. BARBER, of Ontario Co.—Pears should be gathered upon a cool, cloudy day, or if upon a sunny day, should be picked in the morning or evening. Pears picked in the heat of the day and at once barrelled up, ripen the sooner for it. Pears sweat more than apples, and the packages in which they are kept should be well ventilated. Prefers barrels to boxes, and, if possible, wraps each pear separately in a paper. Barrels are not jammed as much in moving—they are rolled.

Mr. JACOBS is a dealer in fruit. Producers make quite an error in shipping their fruit in too large packages, and another error in not having fruit properly assorted. A few poor specimens give a bad impression, even if every other pear or apple be of the highest perfection. The best things to pack fruit in are barrels or half-barrels, and crates are the worst things to pack and ship fruit in.

P. BARRY could not agree with the gentlemen who recommended barrels. In Europe, they always pack their pears in small boxes for market, holding from half a peck to a peck, between layers of dry moss or leaves. In England and in Paris you see no such things as barrels in the transportation of fruit. They use parcels which can easily be lifted and carefully laid down by the person transferring them from vehicle to vehicle.

Mr. MOODY differed from Mr. HOOKER as to the putting into a cellar. Thought that when first taken from the tree, pears should be put into a cool, dry cellar, to avoid out-of-door changes of temperature.

Dr. SYLVESTER suggested that, where possible, the fruit packed have a room in a side-hill, which preserves an equable temperature, and yet is dry and well ventilated.

SUBJECT II.

The best method of preserving fruits, so as in every way to prolong the period of consumption.

Mr. SHARPE, of Niagara Co., preserves fruit by canning. Some fruit now on exhibition by him was kept in his cellar, and as soon as he had perfected the method he would give it to the public. Here were Bartlett and other fall pears in good order to-day.

HUGH T. BROOKS, of Wyoming, thought this subject a very important one. People have got into the habit of thinking that they can not help losing a part of their fruit by decay. At least one-third of all the apples put into our cellars become decayed and worthless, and this loss is a serious one. Now, some cellars keep fruit very much better than others. It is important to know what constitutes a good fruit cellar. Is it dryness? or is it lowness of temperature? or is it evenness of temperature? or what are the controlling causes, as to preserving fruit? There have been some who thought their garrets better than even a dry cellar for keeping fruit.

Mr. BISSELL, of Monroe Co., agreed in thinking this subject a very important one, because of the advantages possessed by winter maturing fruits, and by fruits which can easily be kept into and during the winter and then eaten fresh, over preserved fruits, over sweetmeats and over dried fruits. These well-kept fruits possess decided advantages, first, as regards the health of families; second, as respects the trouble of preserving or keeping; third, as regards the expense of preserving; and last, not least, the pleasure of partaking of fresh fruits when we can thus "prolong the period of consumption," is far greater than in consuming the cloying and indigestible sweetmeats. The season when sweetmeats and preserves begin to be

relied upon by housekeepers commences about (or soon after) New Years and is prolonged until the strawberry season in June, and, at the very least, is over four months in extent.

Now, first, as regards the health of families, this latter part of winter and the spring is the period, the very time, when the physical strength is taxed to the utmost, and when the digestive organs need assistance instead of additional burdens. Let persons at this period give tone to their stomachs by the judicious use of nutritious apples, beautiful pears and luscious grapes, and the difference in doctor's bills will speedily become apparent.

As to the trouble of preserving, the difference is quite apparent between the days and almost the weeks when the females of the family are paring, or stoning, or peeling the fruits, and are stewing and steaming not only the sweetmeats but themselves, over the kitchen stoves and furnaces; the difference, I say, is quite apparent between these and the comparatively slight trouble required for the quiet boxing or barrelling of the grapes and apples and pears in the cool, dry cellars.

The expense of the stewing and the cooking and preserving and the enormous consumption of sugar is another item; but, as that is a matter of dollars merely, we will not complain too much of that. Still, it is no small item in the family expenses of many a townsman of ours.

And now, when it comes to the pleasure of partaking, that question is settled incontrovertibly and without debate by the fact that we never see these cloying sweetmeats presented upon the table when fresh fruits are in season. When guests are offered strawberries and cream, they never express a preference for preserved quinces. This pleasure of partaking of fruits as nearly fresh as possible was more than proved by the burst of applause which greeted our esteemed fellow-member, YEOMANS, when he introduced his method of bottling and keeping fruits in a comparatively fresh state, and without totally destroying their native flavor by sickening additions and cloying combinations. Next March or April, any member would speedily decide as to this pleasure of partaking if offered a couple of Easter Beurre pears, or a saucer full of stewed plums; if shown a fine King apple, or a dish of ever so nice Yankee "apple sass"; a bunch of luscious Diana grapes, such as I see upon the tables before us, or a plate of jelly of the choicest sort.

As to this "prolonging the period of consumption" of the apples, pears, etc, their keeping qualities have been and are fully discussed and proclaimed; but as to grapes, we have hardly begun to test this delightful fruit in this respect. In recommending a grape, we speak of its hardiness, of its productiveness, of its early ripening qualities, flavor, etc, but, as yet, very little of its keeping qualities. In my own case, the effort to keep varieties has thus far been rendered futile by constant requests to see our assortment and to taste a few berries of each variety, and by the desire of each agent or salesman to carry with him the finest of the bunches remaining at the time of the gentleman's visit to our vineries. But, in the midst of all these disadvantages, the Diana has surpassed our most sanguine expectations, and the specimens shown upon your tables by me to-day proves what this splendid fruit would do when kept in a suitable manner, and not in a dry, stove-heated room, not every day opened, exposed and handled by visitors; because, even now, not a berry drops from the bunch, but all are as fine, plump and fresh as can be expected. It is a very great desideratum to have a grape that ripens early and ripens surely, and yet keeps—and keeps well. I hope that we shall have the experience of members as to other sorts, as well as Diana; as to Concord, for instance—in respect to its keeping and carrying qualities. For, at whatever dinner party or evening entertainment during February or March there should be presented finely kept, fresh Concords, Dianas, Cuyahogas, or Delawares, we apprehend that not a single partaker of the luscious fruit but would express his decided preference for such dainty entertainments over either the domestic or foreign sweetmeats as commonly set forth at our parties; would express his preference, I say, by the enthusiastic use of General TAYLOR's oft-quoted words, "A little more *grape*, Captain BRAGG."

Mr. SHARPE agreed with the gentleman in considering this subject as important one, and hoped that fall and winter fruit could in some way be kept until the season for fresh ripening again.

[To be concluded next month.]

GRAFTING THE GRAPE.

As early in the spring as the ground can be got away from the stock to be grafted upon, clean away around the stem two or three inches deep, saw or cut off the vine smooth; then prepare your graft, (which should have been cut from the vine in the early part of the winter,) as shown in fig. 1.

If your stock is thick, say one inch or more in diameter, cut out a wedge, see fig. 2, to correspond with the wedge on the graft fig. 1; if the stock be less than ¾ of an inch in diameter, then merely split down clean, as in the usual way of cleft grafting, but if the graft be not held firmly, it is well to tie around the split with a bit of matting or strong thread; which will rot off before doing any damage. When you have inserted the graft, draw the earth in and press firmly around the joint where operated upon, and up to and barely exposing the bud, filling in with dry mould if the earth be wet. Use no cement whatever; I believe it is a great evil.

Fig. 1. Fig. 2

Be sure to cover your graft with loose straw or some kind of rubbish that will not pack tight; this is to keep the frost from hoisting out the graft, in case freezing occurs afterwards, which frequently is the case, as I have grafted in February sometimes, as well as to shade the bud and keep the air off somewhat—a necessary precaution. When the graft begins to grow, the natural or stock suckers must be kept down or they will soon rob the graft. I have usually succeeded in this way with about 80 per cent., while I hear universal complaints of failure. For root grafting in the house my best success has been obtained when done in the saddle mode. And this done late in the spring when the vines begin to grow.

One important part has almost been overlooked. You must select stocks of as near similar wood; for instance, Delaware will hardly take at all on a rank fox, while upon Clinton and our wild frost grape it takes very freely. Almost any kind will take upon Isabella.

S. MILLER.

Calmdale, Pa.

STRIKING TOMATOES FROM CUTTINGS.—In reply to the inquiry in the last number of the *Genesee Farmer* in regard to striking tomatoes from cuttings. The cuttings to be taken from the tops of the bearing shoots, (say in September, the same as bedding plants,) and planted in five inch pots filled with mould. They should then be watered and placed in the shade. The cuttings form roots and are ready to pot off in a fortnight or three weeks. On the appearance of frost they should be stored away with other plants intended to be kept over winter, in an airy cellar or pit, kept moderately moist and free from frost. I find that plants raised from cuttings are less succulent, and therefore do not so readily damp off, or suffer from the cold, to which they are liable to be exposed after being planted out; and come into bearing sooner.—JAMES CRAIB, *Rochester, N. Y.*

EDITOR'S TABLE.

NOTES ON THE WEATHER FOR DECEMBER, 1860, WITH SOME ANNUAL RESULTS.—The *first* half of December was cold, giving its average temperature 25.3°, which is 5.4° below the mean for 23 years. The daily mean had ranged 23° to 32° till the 13th, then a colder period commenced, and the heat fell to *one* degree below zero on the 15th. On the North side of Lake Ontario the temperature on the 14th at Toronto was 10° below zero.

In 1856, 1857 and 1858, the heat was much above zero, but in 1859 this half was colder than the present, and the canal was fully frozen on the 5th. This year the canal was fully frozen on November 25th, and continued frozen. Snow fell on the 1st to the 3rd, and sleighs were out on the 2nd, and the sleighing was good to the 15th. Fine cloud of Aurora Borealis this evening.

The *second* half was warmer, and its average 25.8°, which is 1.4° above the average for 23 years. The weather was pleasant for business, but cloudy.

The whole month was cloudy, so that the sky was at no time *clear*, and most of the time deep clouds. The rain and snow moderate; no sleighing in the last half, though there was in the eastern counties, on our parallel of latitude, an in New England and Canada.

The public papers show us that Dec. 19th brought a great snow storm over England, and the snow was so deep on the 20th as to block up the roads: the cold was great after it.

25th, near London, the cold was 8° below zero; waters had frozen, and skating common. A gentleman skating on the Surpentine, broke through the ice and was drowned. At Turin, Sardinia, Lat. 45°, the cold 12°. The storm was severe over England, Scotland, France and Italy. On the 22nd was a great snow storm over New England and the eastern part of our State.

The average heat of the month was 26.1°, being 1.8° below that for 23 years. The amount of water fallen in the month was only 1.532 inches.

ANNUAL RESULTS.—The mean temperature for year is 48.2°, and for 24 years is 47.0°, and for the last ten years is 47.5, only five-tenths of a degree different.

The water for the year is 29.779 inches, and for 24 years is very near 32 inches; so that the water for 1860 is about 2.2 inches less than the average. This is accounted for by the small quantity of water in the first five months of the year, which was fully three inches less than their average.

It may interest our readers to see the average quantity of water that has fallen here, in the several months for the last 24 years. The average is as follows:

Jan., 1.978; Feb., 1.917; March, 1.938; April, 2.375; May, 2.890; June, 3.142; July, 3.218; Aug., 2.705; Sep., 3.288; Oct., 3.169; Nov., 2.817; Dec., 2.575 inches. The sum, 32.006, is the annual average of water, or 32 inches, the mean of 24 years.

It is obvious that the warmer months require more water, on account of the greater use of it by the vegetable world, and the greater evaporation from the heat. The torrid zone needs and receives more water by three or four fold, than in our latitude. London, above 22 inches; Paris, near 23; St. Petersburgh, near 18 inches.

Our Spring was rather late, but the harvests were abundant. In England, the summer was wet and cold, and the harvest below the average, and badly gathered. The exportation of breadstuffs from our ports to England has been very great for months.

Great changes amidst great uniformity. So the Great Ruler distributes the riches of his bounty.

JANUARY PREMIUMS.—Below we give the names of the successful competitors for our January Cash Prizes. Our friends can draw on us at sight for the amount, or we will send it by mail, or in any other way they may designate. We desire to thank *all* our friends, both those who have taken Cash Prizes, and those who have not, for their efforts on behalf of the *Farmer*. It will be seen that the clubs are *larger* than last year. Thus, last year the first prize was taken by a club of 166, this year, by 211; the second prize by 157, this year by 165; the third, last year, 130, this year by 151. This is a gratifying result, and shows that, even during the present political excitement, intelligent farmers are unwilling to dispense with their agricultural papers.

1. G. B. Whiteside, Brockport, N. Y.,	$50	for 211	subs.
2. D. S. Early, Annville, Pa.,	30	" 165	"
3. I. W. Briggs, Macedon, N. Y.,	20	" 151	"
4. James Blair, Egmondville, C. W.,	15	" 118	"
5. W. H. Gilmer, Manchester, N. H.,	10	" 101	"
6. C. Howard, Hamilton, C. W.,	9	" 100	"
7. S. Tubby, Fingal, C. W.,	8	" 79	"
8. J. McAdams, Mt. Pleasant, Pa.,	7	" 76	"
9. O. S. Cummings, Trenton Falls, N. Y.,	6	" 71	"
10. W. H. Scott, Ninevah, N. Y.,	5	" 68	"
11. W. Hibbard, Manchester Station, Ct.,	4	" 60	"
12. John Leigh, Aurora, C. W.,	3	" 54	"
13. R. Thomas, New Boston, Ill.,	2	" 52	"
14. W. C. McClymonds, New Castle, Pa.,	1	" 46	"

A "PRIZE ESSAY" NUMBER.—This number of the *Farmer* is occupied principally with Prize Essays. A great many essays were received, and the committees, in some instances, had considerable difficulty in awarding the prizes. We think this "Prize Essay number" is worth the whole cost of the volume.

APRIL CASH PRIZES.—We would call the particular attention of our agents and of all our friends who are willing to use their influence to extend the circulation of the *Genesee Farmer*, to our list of Cash Prizes for clubs of subscribers sent in between the 15th of January and the 15th of April. (See last page of this number.)

THE RURAL ANNUAL AND HORTICULTURAL DIRECTORY FOR 1861 should be in the hands of every farmer and gardener. We will send it, prepaid, by mail for 25 cents.

THE YALE LECTURES.—The agricultural lecture course at New Haven has been postponed till next year.

The Markets.

Owing to the large foreign demand for wheat, prices have reached a point during the past month, at which millers and dealers might have sold with little loss, except the expense of storage, etc. The extreme stringency of the English and French money market, together with the high rates of freight, have had a slightly depressing effect on our markets, and prices are now somewhat lower. The winter in England has been extremely cold, and this was favorable for the threshing of the damp grain. According to the last report, however, a general thaw had occurred. The *London Mark Lane Express* of January 7, received this morning (Jan. 24), says:

Of the imports lately received, America has contributed about 1,500,000 qrs. (12,000,000 bushels), and she will probably be able to send as much more. Although we do not expect future imports to continue at the present rate, we think enough will arrive between now and harvest to fill up any void in our own crop, and to supply the deficiency in potatoes. But with a very poor beginning as to Wheat-sowing, and the state of the land very bad, we do not see much probability of a decline in prices. On the other hand, if foreign resources should fail, and the growing crops be threatened, or an European war break out, there is ample room for a further large advance.

American red Wheat in London is quoted at $1.88@$1.95; white, $1.89@$2.04 per bushel—from 3 to 6 cents higher than our last month's quotations.

New York, Jan. 24.—Milwaukee club, $1.25; choice winter red Western, $1.33; white Michigan, $1.50. Rye, 70@75c. Barley, 74c. Oats, 26@28c. Corn—Western mixed, 6.@68c. Hogs, $7.25@$7.50 per 100 lbs.

Toronto, Jan. 21.—Winter Wheat, $1.15@$1.20; spring wheat, 97c@$1.01. Barley, 52@57c. Peas, 55@58c. Oats, 26@28c. Hogs, $5.25@$5.75.

Rochester, Jan. 24.—Hogs, $6.75@$7. Beans, 95c. Wheat—best white, $1.30; Mediterranean, $1.06@$1.08. Corn, 50@51c. Barley, 50c. Oats, 25c.

Philadelphia, Jan 23.—Wheat—white, $1.40@$1.50; red, $1.30@$1.33. Corn—new yellow, 70c.

Cincinnati, Jan. 21.—Hogs, $6.50@$6.70.

ADVERTISEMENTS.

A few short advertisements of interest to farmers—and only such—will be inserted in the *Geneses Farmer* for twenty-five cents a line, or $2.50 per square, each insertion, payable in advance. To secure insertion, they should be sent in by the 15th of the previous month. The *Farmer* has large lists of subscribers in *every State and Territory, and in all the British Provinces.* (It has nearly 5000 subscribers in Canada West alone.) There is no better or cheaper medium for advertising everything of general interest to rural residents in all parts of the United States and Canada.

We will also insert a few "Special Notices," if appropriate to our columns, at fifty cents a line.

J. M. THORBURN & CO.'S
DESCRIPTIVE CATALOGUE
OF
Vegetable and Agricultural Seeds for 1861,

Is now ready for mailing to all applicants enclosing a postage stamp.

N. B.—We have now in the press our Spring Catalogue of Hybrid French Gladiolus, &c., and a complete List of all the novelties in the floral line. J. M. THORBURN & CO.,
Feb —1t 15 John Street, New York.

No. 1 Peruvian Guano, Warranted Pure,
SUPERIOR PHOSPHATE OF LIME,
PURE GROUND BONE, POUDRETTE, &c.,
Sold by GRIFFING, BROTHER & Co.,
Feb.—4t. 60 Courtland St., New York City.

NEW GRAPES.

SEND to Rochester, N. Y., for C. P. BISSELL & SALTER'S Illustrated and Descriptive Catalogue of over eighty sorts of Grapes. Feb.—1t.

FARM FOR SALE OR TO HIRE.

A VALUABLE FARM of 82 acres, in New Jersey, near New York, good land, well situated, near churches, schools, &c. About 60 acres under cultivation. There is good furniture in the house: also, horses, oxen, cows, &c., on the place, with wagons and farming utensils of all kinds, which will be sold with it, and at a great bargain for a small payment down. All the credit which may reasonably be required on the balance (in annual instalments) will be given. For further particulars, address,
U. B. BREWSTER, Jr.,
(Box 362 P. O.) New York City.

ALSO—A place of about 15 acres in the City of Madison, Wisconsin, with a good house, an excellent state of cultivation, grapery, &c., being within the city limits, and the capital of the State, the most beautiful city in the West. It will be sold low to close an estate, and will be a fortune to the purchaser in a few years, as the city must have it for building purposes—meantime a market is *at the door* for all its produce, &c.
Feb.—1t. Address as above.

EMPLOYMENT.

THE undersigned are desirous of securing the services of a few Young Men to engage in a Traveling Agency, upon the salary of

Forty Dollars per Month, and all Expenses Paid.

This is an opportunity seldom offered, and to those who merit the approbation of the subscribers, by a strict attention to business, can rely upon constant employment for a term of years. For further particulars, address, CONANT & DRAKE,
Feb.—2t. 31 Main St., Atkinson Depot, N. H.

Washing Made Easy.

USE THE EMPIRE SOAP, made without lye or grease, at a cost of less than two cents per pound. Clothes wash one quarter easier, and are much whiter with this soap than with any other. It is not excelled for removing tar or grease spots, and for toilet use. This soap should be in the possession of every family. For the above receipt, send 25 cts. to
Feb.—1t. C. B. HART, Victor, Ontario Co., N. Y.

WILD TURKEYS FOR SALE.

A FEW pairs of Wild Turkeys, bred at Springside, the past season, at $8.00 the pair.

White Chinese Swan Geese.

One pair of these beautiful geese may be had at $10, if applied for soon. Apply to C. N. BEMENT.
Springside, N. Y., Feb. 1st, 1861. 1t.

To Farmers.

SELL YOUR HAY AND FEED YOUR STALKS. The **Keystone Cornstalk Cutter and Grinder** is sold at the North River Agricultural Warehouse.
GRIFFING, BROTHER & Co., Proprietors,
Feb.—2t. 60 Courtland St., New York.

FOR SALE—The Imported thorough-bred Galloway Bull, "Moss Trooper," three years old. Took first prize at the Provincial Show, Toronto, in 1858; 2nd at Kingston, in 1859; and 1st at Hamilton, in 1860, for best three-year-old: also, the Gold Medal, for best bull of any age, and was in the prize herd.
2t. Address, JOHN COOK, Mount Albion P. O., C. W.

THE BEST THING I EVER HEARD OF.

25 CENTS invested in the RUSSIA WATERPROOF will save $5 in boots and shoes. (Cut this out and save it.)
1t. Principal Depot, 297 Pearl St., New York. W. C. GRAY.

5,000 AGENTS WANTED—To sell 5 new inventions—very recent and of great value to families. All pay great profits to agents. Send four stamps and get 80 pages of particulars. Nov.—6t* EPHRAIM BROWN, Lowell, Mass.

BOOK AGENTS WANTED.

EXTRA INDUCEMENTS OFFERED.
Address, GEO. F. TUTTLE,
Feb.—3t. 147 Fulton St., New York.

BRONZE TURKEYS FOR SALE—A few pairs, raised from the largest stock in the country.
Feb.—1t. A. ELDREDGE, Jr., North White Creek, N. Y.

THE MOST SPLENDID CHANCES ever offered to Agents, and NO HUMBUG! Particulars mailed free.
Feb.—2t* Address, BOX 362, Syracuse, N. Y.

DRAIN TILE MACHINE—For making drain tiles. Manufactured by A. La TOURRETTE,
Feb.—2t.* Waterloo, N. Y.

NEW SEEDS FOR 1861—At the London Seed Store, Richmond St, London, C. W. JAMES GRIFFIN, Prop'r.

PEAR SEED! PEAR SEED!

FRESH and of superior quality. Price, $1.50 per lb., and at reduced rates to Nurserymen and others' ordering large quantities.

ALSO,

APPLE SEED—APPLE SEED.
Price, 25 cents per quart; $5 per bushel.

ALSO,

MAHALEB CHERRY PITS.
Price, 75 cents per quart; $15 per bushel.

BLACK MAZZARD CHERRY PITS.
Price, 25 cents per quart; $5 per bushel.

ALSO,

PLUM PITS—PLUM PITS,
Price, 40 cents per quart; $8 per bushel.

STRAWBERRY SEED—STRAWBERRY SEED.
12 superb varieties; from $1.50 to $2.50 per oz.

EUROPEAN LARCH SEED.
Price, 20 cents per oz.; $1 50 per lb.

BLACK AUSTRIAN PINE SEED.
Price, 25 cents per oz.; $3 per lb.

SCOTCH FIR SEED.
Price, 15 cents per oz.; $1.50 per lb.

HONEY LOCUST SEED.
Price, 60 cents per lb.

BALD CYPRESS SEED.
Price, 3 cents per quart; $7 per bushel.

VIRGILIA LUTEA, or YELLOW WOOD SEED.
Price, $1 per oz.; $12 per lb.

NORWAY SPRUCE SEED.
Price, 15 cents per oz.; 75 cents per lb.

EUROPEAN SILVER FIR SEED.
Price 15 cents per oz.; $1 per lb.

With one of the most extensive collections of Garden, Field and Flower Seeds in the world. ☞ Send for our Catalogues.

J. M. THORBURN & CO.,
Feb.—1t 15 JOHN STREET, NEW YORK.

GRAPE VINES AND TREES.

THE subscribers offer for sale a fine stock of the New Hardy Grape Vines at reduced prices, all grown from genuine stock. The increased facilities for propagating the Grape enable us to furnish well rooted plants at reduced prices, mostly of the following sorts:

DELAWARE,
DIANA,
CONCORD,
REBECCA,
HARTFORD PROLIFIC,
ANNA,
OPORTO, ETC.

Including Foreign Sorts for culture under glass. Older sorts of Isabella, Catawba, Clinton, etc., in large quantities.

Large stock of Standard and Dwarf Pear Trees, Peaches and Nectarines.

Large stock of Standard and Dwarf Cherry trees, by the quantity, cheap (2 years old, fine).

Evergreen Trees of all sizes.

200,000 Wilson's Albany Strawberry plants, and other good sorts.

Raspberry plants, including Orange, Doolittle's Improved, etc.

European Mountain Ash Seedlings, one year, fine growth.

Hedge Plants, of Honey Locust, American Arbor Vitæ etc.

Large assortment of Nursery Stock always on hand.

N. B.—We have the Genesee and Tompkins County King Apple Trees.

W. T. & E. SMITH,
Feb.—2t Geneva Nursery, Geneva, N. Y.

MARBLEHEAD MAMMOTH CABBAGE.

THIS is the largest Cabbage in the world, averaging 30 lbs. per plant *by the acre!* Plants of this variety have been raised, weighing over 60 lbs., measuring nearly six feet around the solid head. Over sixty tons have been raised to the acre. Upwards of 300 have been cleared from one half acre of land planted to this Cabbage.

Circulars, in which the above facts are thoroughly substantiated, and many statements relative to the famous Mason and Stone Mason Cabbage, Marrow Squash, and Hubbard Squash, (for the introduction of which I received a piece of silver plate, as a testimonial from the Massachusetts Horticultural Society,) forwarded gratis.

Packages of the Mammoth, 25 cts. each; of the Mason or Stone Mason, 33 cents per ounce; $1.00 for four ounces. Hubbard Squash, 15 cts. for about fifty seeds; extra pure Marrow, 25 cts. per package.

JAMES J. H. GREGORY,
Feb.—1t. Marblehead, Mass.

Now is the Time to Subscribe

FOR VOLUME ELEVEN OF

Frank Leslie's Illustrated Newspaper

$3 PER YEAR.

19 CITY HALL SQUARE, N. Y.

Bloomington Nursery, Illinois,

AT Junction of Illinois Central, (Dubuque and Cairo,) and St. Louis, Alton and Chicago Rail Roads. Established 1852. 120 acres Fruit, Ornamental and Nursery Stock. A very general and reliable assortment, cheap for cash. Particular attention invited to the splendid stock and assortment of *one year Apple Grafts*, mostly 2 to 3 feet: 1000, $25. Also, *Root Grafts*: 10,000, $50, for our ordinary and, we may add, unusually successful quality, (from which above named fine 1 year olds.) *Root Grafts*, extra strong, (to order only,) 10,000, $75. *Dwarf Fruit*,—choice *Currants* and *Grapes*, many sorts. *Mulberry*, Downing's everbearing, $16 per doz. *Gooseberry, Blackberry, Raspberry*, 15 to $40 per 1000. *Strawberry*, including Wilson's, and both McAvoy's, 1000, $5. *Asparagus*, strong 3 year, 1:00, $5. *Rhubarb*, including Linneus and Victoria, *true*, 1000, $30 to $50. *Apple Stocks*, good 2nd size for budding, 10,000, $15. Quince, Pear, Plum, Mahaleb and Rose Stocks. *Apple Seeds, Shade* and *Weeping Trees, Roses, Shrubs* and *Bulbs*, a superb stock. *Evergreens*, nursery grown, several sorts, 1000, $10, &c. Packing carefully done. See Catalogue. Address, Bloomington, Ill.

Feb.—4t. F. K. PHŒNIX.

SCIONS AND EVERGREENS.

S. MOULSON, of the OLD ROCHESTER NURSERIES, offers large quantities of Apple, Pear and Cherry Scions, at very reasonable rates—including, amongst the Apples, King of Tompkins County, and amongst the Pears, Bartlett and other popular varieties.

ALSO,

An extensive lot of evergreens on land required for other purposes, which will be sold remarkably cheap, if taken without special selection. Also, an extensive assortment of the usual Nursery Items.

☞ Catalogues, Wholesale and Retail, forwarded to all applicants enclosing stamps for prepayment. Feb.—1t

SEEDS, PITS, STOCKS AND TREES.

SEEDS—Pear and Apple.

PITS—Plum, Peach, Mahaleb and Mazzard Cherry.

STOCKS—Pear, Quince and Cuttings; Plum and Cherry for standard and dwarf; Apple for grafting and budding, root-grafted and Paradise.

TREES—Fruit, standard and dwarf; Evergreen and Deciduous Ornamental; Small Fruit, Shrubs and Vines; Genesee, King of Tompkins County Apple. *All at reduced rates.*

☞ Send for Trade List or Retail Catalogue.

Seneca Lake Highland Nurseries, established in 1842.

Feb.—1t E. C. FROST, Havana, N. Y.

THE HORTICULTURIST

IS the best magazine of its kind in America. Every admirer of FLOWERS, FRUITS,
BEAUTIFUL GARDENS,
PLEASANT HOMES, &c., &c.,
should subscribe for it. Published monthly—48 pages—elegantly illustrated. Terms, $2 a year. For the two years, 1860 and 1861 $3. The edition with colored plates, $5 a year.

Our Catalogue is sent free to everybody.

SAXTON & BARKER, Agricultural Book Publishers,
Feb.—1t. No. 25 Park Row, New York.

FOR SALE.—LARGE OR SMALL QUANTITIES.

Victoria Rhubarb,.....$3.00 per 100, $25 per 1000.
Allen's Hardy Raspberry,..... 1.00 " 8 "
Silver Maple Seedlings,..... 0.50 " 4 "

12 acres Lawton or New Rochelle Blackberry; 2 acres Dorchester Blackberry; 20,000 Peach Trees, choice varieties Strawberries, Cranberries, and a good supply of other NURSERY STOCK, of best quality. *Send for a Catalogue—gratis.*

Feb.—1t. WILLIAM PARRY, Cinnaminson, N. J.

Fresh Pear Seed for Sale.

WE have just received a fine lot of Imported Pear Seed, gathered specially for us with the greatest care. All pear seed sent out by us has given perfect satisfaction.

Feb.—1t. FROST & Co., Rochester, N. Y.

New Cuyahoga Grapes.

SEND a stamp for the Illustrated and Descriptive Catalogue of New Grapes, by C. P. BISSELL & SALTER.

Feb.—1t. Rochester, N. Y.

AGENTS WANTED,

IN all parts of the United States, to sell good BOOKS. For terms, &c., address, FRED'K W. PRINCE,

Feb.—2t. 25 Park Row, New York.

LAWTON BLACKBERRIES—A fine lot, from root cuttings, $1 per dozen, $4 per 100. Root cuttings by mail, post paid, 25 for $1. Feb.—2t. H. B. LUM, Sandusky, Ohio.

THE TRIBUNE FOR 1861.

PROSPECTUS.

THE WEEKLY TRIBUNE is now in its XXth Volume. During the past year, THE TRIBUNE has been obliged to devote quite a large proportion of its space to Politics, but we shall henceforth be able to limit our space devoted to Political discussion, and devote most of our columns to subjects of less intense, but more abiding, interest. Among these, we mean to pay especial attention to

I. EDUCATION.—The whole subject of Education, both Popular and General, will be discussed in our columns throughout the year 1861, and we hope to enlist, in that discussion some of the profoundest thinkers and the ablest instructors in our country. It is at once our hope and our resolve, that the cause of Education shall receive an impetus from the exertions of THE TRIBUNE in its behalf during the year 1861.

II. AGRICULTURE.—We have been compelled to restrict our elucidations of this great interest throughout 1860, and shall endeavor to atone therefor in 1861. Whatever discovery, deduction, demonstration, is calculated to render the reward of labor devoted to cultivation more ample or more certain, shall receive prompt and full attention.

III. MANUFACTURES, &c.—We hail every invention or enterprise whereby American Capital and Labor are attracted to and advantageously employed in any department of Manufacturing or Mechanical Industry as a real contribution to the public weal, insuring ampler, steadier, more convenient, more remunerating markets to the Farmer, with fuller employment and better wages to the Laborer. The Progress of Mining, Iron-making, Steel making, Cloth-weaving, &c., &c., in our country, and the world, shall be watched and reported by us with an earnest and active sympathy.

IV. FOREIGN AFFAIRS.—We employ the best correspondents in London, Paris, Turin, Berlin, and other European capitals, to transmit us early and accurate advices of the great changes there silently but certainly preparing. In spite of the pressure of Domestic Politics, our News from the Old World is now varied and ample; but we shall have to render it more perfect during the eventful year just before us.

V. HOME NEWS.—We employ regular paid correspondents in California, at the Isthmus of Darien, in the Rocky Mountain Gold Region, and wherever else they seem requisite. From the more accessible portions of our own country, we derive our information mainly from the multifarious correspondents of the Associated Press, from our exchanges, and the occasional letters of intelligent friends. We aim to print the cheapest general newspaper, with the fullest and most authentic summary of useful intelligence that is anywhere afforded. Hoping to "make each day a critic on the last," and print a better and better paper from year to year, as our means are steadily enlarged through the generous co-operation of our many well-wishers, we solicit and shall labor to deserve a continuance of public favor.

TERMS:

DAILY TRIBUNE, (311 issues per annum).....$6
SEMI-WEEKLY, (104 " " ").....$3
WEEKLY, (52 " " ").....$2

TO CLUBS.—*Semi-Weekly*, two copies for $5, five copies for $11.25; ten copies to one address for $20; and any larger number at the latter rate. For a club of twenty, an extra copy will be sent. For a club of forty, we send THE DAILY TRIBUNE gratis one year.

Weekly: three copies for $5; five for $8; ten for $13, and any larger number at the rate of $1.20 each per annum, the paper to be addressed to each subscriber. To clubs of twenty, we send an extra copy.

Twenty copies *to one address* for $20, with one extra to him who sends us the club. For clubs of forty, we send one copy of THE SEMI-WEEKLY TRIBUNE. For each club of one hundred, THE DAILY TRIBUNE will be sent gratis one year.

Payment always in advance. Address,
THE TRIBUNE, No. 154 Nassau St., New York.

THE TRIBUNE ALMANAC FOR 1861.

This popular Annual was issued on the first of January, and contains

THE RETURNS OF THE ELECTIONS OF 1860,

and a large amount of other interesting political matter.

PRICE 13 cents; 12 copies for $1, 100 copies $8, postage paid. By express, $7 per 100. Cash orders solicited.
Feb.—3t. Address, THE TRIBUNE, New York.

DO YOU WANT TO LAUGH?

SUBSCRIBE FOR

FRANK LESLIE'S BUDGET OF FUN.

$1 50 PER YEAR.

19 CITY HALL SQUARE, N. Y.

CHESTER WHITE PIGS.—The subscriber continues to breed and ship to order Pure Bred Chester White Pigs of the best quality. SETH A. BUSHNELL,
Jan.—3t.* Hartford, Trumbull Co., Ohio.

Books for Farmers and Fruit Growers.

THE following works on Agriculture, Horticulture, &c., may be obtained at the Office of the GENESEE FARMER:

American Florist's Guide..	75	Quimby's Mysteries of Bee-keeping Explained.....	1 00
Browne's Bird Fancier..25 &	50	Rabbit Fancier.....25 &	50
Everybody's Lawyer..$1 &	1 25	Richardson on the Hog....	25
Every Lady her own Flower Gardener.....	50	Do. Domestic Fowls.....	25
Farm Drainage, (H. F. French).....	1 00	Do. on the Dog.....	25
Genesee Farmer (bound volumes) each.....	1 00	Rural Annual and Hort. Directory for 1861.....	25
Liebig's Animal Chemistry	25	(First five vols. do., 1856-7-8-9 and 60, sent for	1 00
Liebig on Food, &c.....	25	Smith's Landscape Gard'g	1 25
Do. Relations of Chemistry to Agriculture.....	25	Rodgers' Scientific Agriculture.....	75
Miner's Bee-keeper's Manual	1 00	Rural Poetry of the English Language, (a beautiful book for a present)..	3 00
Modern Cookery, by Miss Acton and Mrs. S. J. Hale	1 00	The Rose Culturist.....25 &	50
Nash's Practical Horse Farrier.....	50	The Horse and his Diseases	1 00
		Wilson on Flax.....	25

☞ Any of the above named works will be forwarded by mail post-paid, on receipt of the price specified.
Address JOSEPH HARRIS, Rochester, N. Y.

ENGRAVING

IN all its branches, viz: Views of Buildings, Book Illustrations, Machinery, Fruits, Trees, Landscapes, Portraits of Horses and Cattle, Seals, etc., promptly executed on reasonable terms, at No. 86 ARCADE, (over the Post Office).
Feb.—3t L. C. MIX, Rochester, N. Y.

TO FARMERS, HORSE AND CATTLEMEN.

TO save money, to save great trouble, to save your beasts, apply to the celebrated Horse and Cattle Powder, for the cure of Distemper, Yellow Water, Hide Bound, Grub Worms, Bots, &c. By using this Powder, Spring and Fall, you will prevent all kinds of Staggers, Dropsy of the Chest, &c., which destroy so many good beasts. Thousands of dollars can be saved annually by using this Powder. This Powder will cleanse the blood and give new life and vigor to the animal; its effects will soon be made apparent. They are harmless and can be fed with safety. If you adopt this once, you will never depart from it afterwards, as you will find so much improvement in your stock, that you will continue to use it. A receipt for making the above Powder will be sent to any part of the country for $1. Warranted to give satisfaction, otherwise the money will be refunded. Address,
Feb.—1t. D. GOOD, Emigsville, York Co., Pa.

Advice to the Unemployed.

A CANDID BOOK AGENT writes us as follows: "I would advise all who would like a certain well-paying business, to canvass for the **AUBURN PUBLISHING COMPANY.** I have been so employed the last year, and have made, clear of all expenses, over **$1200** and am doing better now than ever before. Their books are the **most salcable**, the **most interesting** and **useful**, and the **best bound**, of any I have ever examined." This man writes the truth; and you can do just as well if you will send for their Confidential Circular to **E. G. STORKE, Auburn, N. Y.** Feb.—1t.

CHAPPED HANDS, FACE AND LIPS CURED

IN A FEW HOURS BY THE USE OF

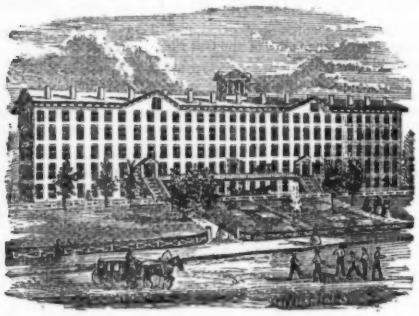
Tadman's Camphor Cake with Glycerine.

WITH the Ladies it is an especial favorite, as the frequent use of it renders the skin soft and delicate in cold weather. One application will show its efficacy. Sent by mail for 25 cts., by TADMAN & Co, Druggists, 81 Bleecker St., New York.
Sold by Higby & Stiams, Detroit; Buck & Raynor, Chicago; W. King, jr., Buffalo; and Lyman, Elliott & Co., Toronto, C. W.

ATTENTION FARMERS.

SIX valuable receipts for thirty cents.—Among the list is a cure for the Heaves, an infallible remedy for Fistula and Poll-evil, to remove a Ringbone without injury to the joint, to effectually cure Wind Galls and Blood Spavins, &c.
Inclose 30 cts., in silver, and address, C. B. HART,
Feb.—1t.* Victor, Ontario Co., N. Y.

RATS.—How any premises may be cleared in one night. The secret how to secure the lot alive without poison or traps. Sent on receipt of $1, post paid, to GEO. H. IRWIN, Jr.,
Apply before the 10th of March. 1t.* Toronto, C. W.



The Fort Edward Institute,

A FIRST CLASS BOARDING SEMINARY, is located at Fort Edward, Washington Co., N. Y., a village of 2,000 inhabitants, having four churches, and being accessible by railroad.

THE BUILDINGS are of brick, erected and furnished in 1854, at a cost of $65,000. This Institute has enjoyed an extraordinary career of prosperity, enrolling each year among its patrons a noble class of pupils from more than half the States of the Union, and from the Canadas. The fundamental principles which underlie its arrangements and which have secured the continued confidence of the public are, ORDER, EXCELLENCE and ECONOMY.

1.—Its regulations and discipline conform to a vigorous and general but non-sectarian Christianity; and no student can continue in its halls whose deportment or scholarship falls decidedly below the high standard established.

2.—Eighteen Professors and Teachers afford the ablest and most thorough instruction in both the *solid* and the *ornamental branches;* while the pressure of goodly numbers constantly serves to emphasize the motives to diligence and duty. The larger classes are so subdivided as never to be unwieldy. A GRADUATE'S COURSE is provided. More than sixty young ladies have received their well-earned diplomas, and many of them have been provided with desirable situations as teachers. Rare facilities are afforded to prepare for college. Not less than one hundred students regularly pursue Classical Studies. A good class *each term* begins the Latin, the Greek, the French and the German. The Commercial Department is practically a Commercial College, not inferior to the best. The departments of Music and Painting are under able and successful teachers. For lads and misses there is an Intermediate and Primary Department, subject to the most kindly and careful regimen. There are five flourishing Literary Societies in the Institute, two for the ladies and three for the gentlemen; they have each a commodious session-room, furnished with much taste, and a good deal of expense.

3.—EXPENSES.—$36 *prepays* for term of fourteen weeks, the charges for board, washing, furnished room, fuel prepared, tuition in common English branches, and admission fee. $110 per academic year. The higher English branches average $1.00 each per term; Ancient Languages, $1.25 each; Modern Languages, $4.00; Oil Painting, $10; Piano, Organ, Melodeon, Guitar, Violin, each, with use of instrument, $12; Penmanship, lessons every day, $2; Vocal Music, $2 50; Higher Book-Keeping, $3. Extra tuition payable at middle of term.

☞ CALENDAR FOR 1861.—Present Winter term ends March 14th, 1861. Spring term begins March 28th. Fall term begins August 22nd.

Two hundred and fifty boarding students are now in attendance. Good students are always received, and charged proportionately to close of term.

Rev. Dr. L. P. Hickok, Vice-President of Union College, writes: "I have had occasion to visit the Fort Edward Institute recently, and became acquainted with its teachers and method of study and discipline. The supervision is strict and kind, the instruction and study thorough and comprehensive, and the general discipline prompt and careful. The large family of pupils appeared orderly, diligent and cheerful. I should not hesitate, under its present management, to recommend it as a favorable place for preparing to enter college, engage in teaching, or commence business in life."

☞ For catalogue with full particulars, or for rooms, direct as above, to Rev. Joseph E. King, Principal. Feb.—1t.*

AMERICAN ARBOR VITÆ.

BALSAM Fir, Hemlock, Norway and American Spruce, Pines, Deciduous Ornamental Trees, Gooseberries, &c., in quantities to suit, at lowest cash rates. Send for a Catalogue.

S. T. KELSEY & CO., GREAT VALLEY NURSERIES,
Nov.—6t Great Valley, Cattaraugus Co., N. Y.

AMERICAN GUANO—From Jarvis & Baker's Islands, in the South Pacific Ocean, imported by the American Guano Company. C. S. MARSHALL, President; H. MATHER, Secretary.

J. K. CHAPPELL, Agent,
June—tf 64 Exchange Street, Rochester, N.Y.

Paul Chilson, Cranberry Culturist,

BELLINGHAM, MASS.,

HAS for sale a choice and large stock of well-grown CRANBERRY PLANTS for Spring planting, adapted to elevated and low lands. These plants are young, healthy, and in full bearing state. Price, for my celebrated *Bell* and *Washington* varieties, $4 per thousand plants; *Cherry* variety, $2.50 per thousand plants. A liberal discount will be made on large quantities. For information on the culture, send for Circulars. Also for sale, the *Orange* Blackberry Raspberry, and Whortleberry—$1 per doz.

All orders promptly attended to, and carefully packed for transportation. The name and directions should be very distinctly written, and the money accompany the order, which may be safely sent by mail. Address PAUL CHILSON.

☞ Jan.—4t BELLINGHAM, NORFOLK CO., MASS.

The Oporto Grape.

THIS Grape ripens in September, is perfectly hardy, and makes Wine which sells from $2 to $4 per gallon.

☞ Send for a Descriptive Catalogue of the Lyons Nursery.
Jan., 1861.—tf E. WARE SYLVESTER, Lyons, N.Y.

SHEEP FOR SALE.

FOR SALE at the Lorillard Sheep Farm at Fordham, Westchester Co., 12 miles from the City of New York, on the N.Y. & Harlem Railroad, 20 SOUTH DOWN RAMS, yearlings; also, 20 SHROPSHIRE DOWN RAMS, yearlings—the production of the finest imported Rams, having taken the first premiums at the New York State Fairs in 1859 and 1860.

Inquire at 16 and 18 Chambers St., New York. Dec.—6m

GEORGE MILLER—Importer and Breeder of Short-horn and Galloway Cattle, Leicester and Cotswold Sheep, Markham P. O., Co. York, Canada West. N. B. A few choice Dorking Fowls, bred from imported stock, can be had in autumn. Price $5 per pair. July—1y

BROWN'S BRONCHIAL TROCHES.

Cure Cough, Cold, Hoarseness, Influenza, any Irritation or Soreness of the Throat, Relieve the hacking Cough in Consumption, Bronchitis, Asthma, and Catarrh. Clear and give strength to the voice of

PUBLIC SPEAKERS and SINGERS.

Few are aware of the importance of checking a Cough or "Common Cold" in its first stage; that which in the beginning would yield to a mild remedy, if neglected soon attacks the Lungs. "*Brown's Bronchial Troches,*" containing demulcent ingredients, allay Pulmonary and Bronchial Irritation.

BROWN'S TROCHES — "That trouble in my Throat (for which the 'Troches' are a specific), having made me often a mere whisperer.'" N. P. WILLIS.

BROWN'S TROCHES — "I recommend their use to PUBLIC SPEAKERS." REV. E. H. CHAPIN.

BROWN'S TROCHES — "Great service in subduing HOARSENESS." REV. DANIEL WISE.

BROWN'S TROCHES — "Almost instant relief in the distressing labor of breathing peculiar to ASTHMA." REV. A. C. EGGLESTON.

BROWN'S TROCHES — "Contain no Opium, or anything injurious." DR. A. A. HAYES, *Chemist, Boston.*

BROWN'S TROCHES — "A simple and pleasant combination for Coughs, &c." DR. G. F. BIGELOW, *Boston.*

BROWN'S TROCHES — "Beneficial in BRONCHITIS." DR. J. F. W. LANE, *Boston.*

BROWN'S TROCHES — "I have proved them excellent for WHOOPING COUGH." REV. H. W. WARREN, *Boston.*

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